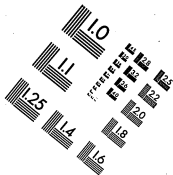
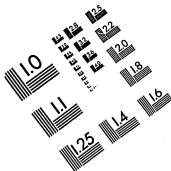




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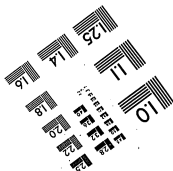
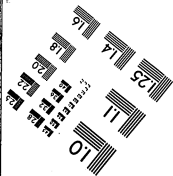
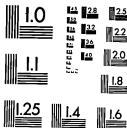
MS303-1980



Centimeter



Inches



Thomas A Edison Papers

A SELECTIVE MICROFILM EDITION

*PART II
(1879-1886)*

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1987

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**Thomas A. Edison Papers
at
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18 June 1981**

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START

66

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THOMAS A. EDISON PAPERS
A SELECTIVE MICROFILM EDITION
PART II
(1879-1886)

REEL 66

DOCUMENT FILE SERIES (DOC-26)

D-83-020 through D-83-030
("Electric Light - General" through
"Electric Light - Edison Electric Light Company - Testing Department")

1883. Electric Light - General (D-83-020)

This folder contains correspondence and other documents relating to the commercial introduction of the electric light and to technical aspects of electric lighting and power, such as the design of lamps and generators and the materials to be used as filaments. Among the documents for 1883 is a list of central stations and isolated lighting plants, dated June 1883.

All the documents have been filmed.

Executive Office
Western Union Telegraph Company

New York Jan 9 1883

W. A. Edison Esq.

Dear Sir,

Absence from the city and
pressure of work is my excuse for not
acknowledging the receipt of the package
of lamps so kindly furnished by
yourself. Please accept my thanks.
I shall be pleased to reciprocate in
any manner in my power.

I enclose a note from our Chief
Operator at Nashville for your possible
benefit.

Truly Yours

W. E. Fenn

*Answering
Feb 14 1883*

College of New Jersey.
(DEPARTMENT OF PHYSICS.)

1883-02-13.

Princeton, Feb. 13, 1883.

T.A. Edison;

Dear sir;

I have just had a proposition to act as an expert and advisor in the matter of storage batteries for the application of electricity to lighting. I have refused to have anything to say or do about it till I hear from you in regard to the question. Do you consider that there is any claim or binding obligation on me as respects that question? As I remember, the question of such batteries had not come up in relation to the Edison system of lighting and if so, it would seem that there would not be any impropriety in my rendering any service I may be able to, especially if you do not, and do not intend to make use of such batteries in your system..

Please let me hear how you understand the matter.

Yours truly.

C. F. Brackett.

*No objection accepting claim on
storage battery against everyone
but Edison -*

1883-03-22

W. A. S. Lancaster.
Haver, Mass.

Mar. 2 - 1883

My dear Johnson,

I have been thinking over that new system of running conductors, and I send along a few ideas which may not be new - it is true, but may call attention to one or two points which I think should be allowed to have full prominence to prevent undue demands being pressed, or accorded to.

Briefly, the system, if you so desire it, is not as advantageous as the statement that $6\frac{1}{2}\%$ of copper investment is saved would seem to indicate, and then is really so. In other words, some other considerations may at times detract entirely from the advantages claimed.

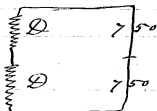
and there are the losses which may be present in both dynamo and conductors. Let me make a few illustrations. By the old system, five multiple arc was allowed to both with lamps and dynamos, and the latter were added singly instead of by tens. It is proposed to run the machines in units of tens, each of the capacity of the present single dynamos. This means a charge of say 30 H instead of 15-20 H for insertion, friction, &c for each unit added. This will aggregate less when full loads are on, but an increase of light of 2500-3000 full power lights is as large one for any moderate area. I just saw, you may say, that the area of lighted surface being much increased, such an increase is just as easy as that of 1000 for a

a smaller one. Under some circumstances
 practical, but let me have all arguments.
 If I remember rightly, with 4000-5000
 lights in circuit in New York, you
 sometimes had as few as 1275 lam, or
 thermostats. Then with 20000, 1000-1200
 would be the minimum and each
 of the new units added means the
 capacity for 2500-3000 full power,
 or 5000-6000 half power light, and
 eventually, with higher economy lights,
 about 4000 full, and 8000 half
 lights. Unquestionably these
 large increases may be expected in
 many areas, but in a great many
 they cannot, and double initial and
 friction in such cases is objectionable.
 Supposing the single and double
 squares to be the same, we
 have the following - I will consider for
 the present the lights to all be at the

terminal of the motor -



(1) single dynamo
of 1500 light
in m.a.



(2) two dynamos in
series and 1 series
of 750 m.a. light

I will call loss in armature bars
armature loss, and in conductors, conductor
loss.

In (1) and (2) we have

total armature loss of (2) only half that
of (1) -

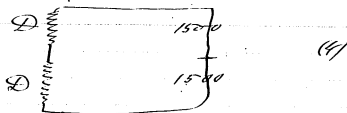
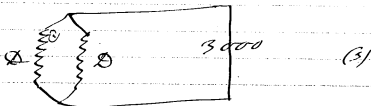
But inertia, magnetization of field
and armature dips, and friction in (1)
double that of (2) -

If conductor in (2) is $\frac{1}{4}$ that
of (1), the same (very nearly) proportion-
ate loss in conductors - and same energy
in lamps - -- Suppose the inertia

1873-02-02

and friction charge to be respectively 15 and 25. A difference of 10 horse in favor of the weigh engine - To this must be added cost of oil, no mean item, and the interest on and wear and tear of the engine. Against the weigh machine is the greater armature loss, which wear would not be greater than 3-4 horse. All things considered, there would be a clear advantage of 7 horse, oil used on one set of armature bearings, wear and tear of our dynamo, has the equivalent of 13-15 horse total. To be compensated for this loss, there is the interest on the saved capital invested in copper, and I can easily conceive circumstances in which this interest and would not be of any advantage.

Suppose now, another machine be added to (1) and 3000 lights be put on both circuits as in (3) and (4)



We now have ^{proportion to} power conductor energy, or less, the conductor of (4) being $\frac{1}{4}$ weight of (3). Same lamp energy. Same armature loss. Same inertia, friction, &c, with a slight advantage in favor of (4) because of driving with single engine. $\frac{1}{4}$ weight of leads in (4) as in (3). Here unquestionably the advantage would be greatly in favor of (4). Now what are the real conditions of

company.

20000 full light will be a good area, although I expect to eventually use 100,000 possibly.

The investment in all things except about conductors and fuses will be, say, the same. The cost of about conductors will not be proportional to the weight of copper, but considering the expense, immolation, process of manufacture, triple connection in junction boxes, &c &c, the cost of new system, of about conductors and fuses, laid down, will probably be fully 50% of the old. Say that on a 20000 light plant, this would effect a saving of \$5000. Of course you know the figures better than I do, but they will illustrate my meaning. The interest on this saving would be at 6% \$3000; or about \$8 a day - the wages of two or three men or the cost of a couple of tons of coal. Is it not

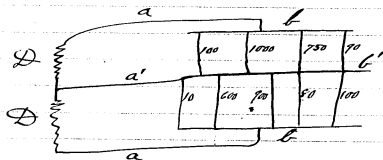
1883-03-02

possible that this sum of \$- could easily be lost by an expenditure in another way? Say, it saved an investment of \$100,000, or an interest of \$6.00 per day - Eighteen dollars is not much, and can easily be lost.

I have noted one way in which such loss can occur, inertia, friction, oil, wear and tear. When you think that 10-12 machines may be used, it is most easily seen - For instance, look at your balance sheet for January - Of course, if the machines are used at their maximum capacity, the loss will not be chargeable to the double machines, but there will unquestionably be times when the inertia &c of such machines count against them. I know Edison counts on big units, and such will exist, but the smaller ones must not be lost sight of - Let me look at another loss which occurs in practice.

1883-03-02

Of course the split in practice will be to so distribute light that the middle wire does as little work as possible - and that the lights should at all times be as equally balanced as possible. Now the middle wire is comprised of two parts, the former ~~and~~ a' and the street induction, or main ~~proper~~ b' .



there being of course any number -

If there are the same number of lamps on each side, and if they make connection at the same junctions, then no current will flow over either a' or b' .

In practice there will never be so. So let us consider the next favorable circumstance - Like number on each side, but differently distributed. Then there will be no current in 'a' but there will be in 'b', with a corresponding loss, which will, with $\frac{1}{2}$ weight conductors, make the total loss of greater ratio than planned for with perfect balance; the condition of $\frac{1}{2}$ weight conductors.

The next case would be with unequal number and distribution, the actual one in practice. Current flow over 'a' and 'b' - with consequent loss, although the loss on one of the main feeders may be lessened.

Lastly let us suppose an extreme and possible, though improbable case, when few or no lamps are in use on one branch, and a large number on the

the other. In this case, the loss on
 $a, b, a' \text{ \& } b'$ would be double
 the proper ratio ^{beside interest of extra machinery}. Again I ask
 if it is not possible, are quite
 probable, that in the real practice of
 a station, the loss will ~~not~~ nearly
 balance the advantages? It would
 well to say you save $62\frac{1}{2}\%$ of
 investment in offer, for the cheap who
 has to put down $\$50,000$ or $\$100,000$
 but it don't so much matter when
 the dividends come to be paid.

Understand me. I am by no
 means sure that in many cases
 this will ^{not} be the best system, but
 if I am to pay $\$50,000$ cash and
 a royalty per 1000 lights, I don't
 propose to admit that it has
 so many advantages - and everything
 I have said is perfectly true, nothing
 perhaps the reverse - and they are approx.

1825-03-02

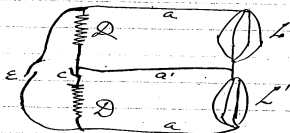
* In re royalty - I need not offer investment of any thing

immediately true -

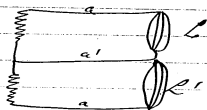
If I may offer any advice, and you know it is sound, I should not be in any hurry to take up Hopkins's proposition - should let him down a little, if you can after what has been said - Of course with the Company to bull and Hopkinson to bear, you have no easy course, - but I most truly think I see now altogether too high an opinion of his invention - If any royalty is offered, I should make it a small one only, or maybe for 1000 over a given number, say 10000 - The difference per year in saving per 1000 will be so small that I should kick like the devil before giving any - * Perhaps he would abandon the U.S. claims on purchase of the English patent - I feel like a professional expert in this writing.

and think I could change Hopkinson's opinion somewhat. I wonder what Edison would think.

The following occurred to me -
If two Ws for incandescence are used,
this arrangement might be of advantage.



To be run in series arrangement if over half the lamps are used then -



but if less than half, break at c, at the same time making at c

which will give the following arrangement, one machine dropping out



This would reverse current in L' of course.

I was to-day on board the "Commande" the largest, and a new "Transatlantique". Fitted with about 450 Swan lamps - by Lumina - and two or three of Kallau arc lamps. 1 alternate with continuous exciter and two heavy continuous current machines. I think the latter were wound with wire and sheet embolism coils - thus



1882-03-02

High speed vertical engine, with dynamic
balance wheel - except attenuator.
Then and its exciter were fitted with
ground pulley, the former having about
six grooves. The engine fly wheel
had corresponding grooves, the diameter
being about 4 or 5 to 1 - motion
was transmitted by round ropes - of, I think,
laid. It was dark rather and we were
lured. It struck me as being very
reliable. Lamps are well put up
with one exception, there being but one
conductor, the rest of the ship being
used for return. Should not be tolerated.
The engine were very well arranged, and
I shall take another look.
Well as ever - Love to all -
Let me hear from you -
In haste, Sincerely yours
F. F. Ferguson

1883-03-13

Geo. Wm. Ballou & Co.
Bankers.

14 Wall Street, New York.
72 Devonshire St. Boston.

New York Mar 13th 1883

P. O. Rec. 467.

Thos. A. Edison Esq

No 65 Fifth Avenue, City.

My dear Sir:

I am in receipt of your favor of even date. I am disposed to look into the matter of lighting small cities and towns by electricity, and I will wait until my associate in such matters, now in Chicago, returns, when I will communicate with you in regard to an appointment for an interview.

Respectfully Yours
Geo Wm Ballou
recd

(dictated)

EDISON AND HIS LIGHT.

The Favorite Son of Port Huron will Continue Himself Solely to Business.

In a recent interview with a New York Journalist Port Huron's favorite son, the great Edison, said:

"I am going to be simply a business man for a year. I am now a regular contractor for electric light plants, and I am going to take a long vacation in the matter of inventiveness. I won't go near a laboratory. I've sold out my electric locomotive to a railroad company, who, I believe, are going to take the thing up and push it. At the expiration of the year I will renew my experiments at Menlo park. The experiments will all be confined to electricity—no more phonographs or things of that kind."

He has for some time been engaged in cheapening the work of the installation of electric light plants, and says: "I have succeeded so well that I can build and equip a station to do the same work as that done in Pearl street for less than one-half the money."

"The chief part of our business now consists in taking contracts to fit out small or large towns with the Edison electric light. Among the contracts signed are those for Sanbury, Pa., where we are putting in 500 lights; Shamokin, Pa., 1,000 lights; Brockton, Mass., 1,000 lights; Lowell, Mass., 1,200 lights; Lawrence,

Mass., 4,000 lights; Haverhill, Mass., 1,000 lights; Renovo, Pa., 500 lights; Erie, Pa., 1,000 lights; Hamilton, O., 1,000 lights; St. Louis, Mo., 9,000 lights; Minneapolis and St. Paul, Minn., 9,400 lights; Appleton, Wis., 1,000 lights; Davenport, Io., 1,000 lights; Watertown, Pa., 500 lights, and Danville, Pa., 1,000 lights. We are also in negotiation with the authorities of 20 other towns where they want electric lights.

"We contract for a certain sum to fit a town with electric light in every detail. We put up our own buildings, set the engine and dynamos, run the wires through the streets, carry them into the houses, put up the fixtures, set the machinery going and furnish light for 30 days, at the end of which time if everything is satisfactory to both sides we turn the system over to the town and pocket our money. We will agree to fit up a town with 2,000 electric lights inside of three months from the time the contract is signed, and sooner than that if necessary. I honestly believe that every one of the gas companies in the towns where electric light is established, will have to go out of the business of furnishing light. I am so convinced of the system's success that, as I told before, I have given up inventing and taken to business pure and simple."

1883-03-02

London. 22 March

My dear Mr. Edison:

I spent the night with
Mr. Siemens at his place last
night, and he writes word to his
agents at Phila. to put themselves
in communication with you that
we agreed was that there should
be a full exchange of views and
comparison ^{statements} and examination
of respective claims on pending
patents. I have only a moment
today but will write more
fully by Saturday's mail

Very sincerely yours

J. P. Bailey

Some time since an anonymous pamphlet
 was sent tending to prove the great
 danger of fire from the introduction
 of the Electric light. a number of
 instances were given where fires had
 been caused by Electric light wires.
 This pamphlet has been extensively
 distributed throughout New York City
 by the gas interest. No distinction was
 made between one or either other system
 of lighting & the whole pamphlet was
~~the~~ uniformly worded as to convey the
 impression that all methods of
 Electric Lighting were dangerous.
 There are two systems of Electric Lighting
 that have no more in common with
 Each other than the sun & the moon.
 They work ~~into~~ on entirely different
 principles & have hardly anything
 in common with each other. The
~~One~~ systems as called the arc &
 the other the incandescent. The
 Arc system has been in commercial
 use for 20 years but recent improvement
 by Gramme, Siemens, Brush & others
 has given it a great impetus. This
 system is the large glaring & flicker
 lights seen in Broadway the Bowery
 & other principal streets & is used

principally for advertising purposes such as displaying the front show windows of stores. ~~though~~ gas being generally used within ~~stores~~. On the other hand the incandescent system the inventor of the writer is ~~the small~~ has for its burner a small globe of glass like a pear containing a thin ~~thin~~ filament of Carbon which is made to glow with a pure & absolutely steady white light, far easier on the eye than a gas jet & giving the same amount of light. The globe containing no air there being a vacuum. The light does not vitiate the air in the slightest degree & it requires 15 of these jets each giving the same light as a gas jet to heat the room to the same extent as a single gas jet. Over 150 factories Newspaper offices, etc. ~~are~~ are lighted entirely by this light the gas jets being supplanted by an equal number of electric jets.

In this City the system has been introduced ~~previously as gas is~~ & is business ~~of~~ of selling light ~~as in the~~ conducted in the same manner as gas. A section of $\frac{1}{2}$ mile

Squares in the lower part of the district
 has been lighted since Sept 4. 1882
 + ~~by~~ Electrically furnished continuously
 night & day ever since without a moment's
 cessation there are 19 miles of
 conductors conveying electricity
 which are laid under the pavement
 ground. 406 buildings are taking
 electricity from the mains ^{supplied by a central station} & 9500
 lamps are connected. The electricity
 passing from a service pipe laid
 from the street under the sidewalk
 to the cellar thence passes through
 an Electric Meter which measures
 the amount of light given out
 by the electric jets precisely
 similar to the measurement of
 gas over 350 stores & houses are
 now being wired preparing to being
 connected to the mains & it is expected
 that by Jan'y 1. 1884 750 buildings
 which were previously lighted by
 gas will be entirely lighted by
 electricity. The Stock Exchange
 The NY Herald the NY Times,
 Commercial Advertiser use the
~~Truth~~ ~~same~~ use the light
 to the entire exclusion of gas -
 & within 10 years illumination by gas
 will not be seen in Manhattan Island

29
Guiana Est. 2s
Maxim Lco.
No. 735. March Term, 1883.

IN THE
Court of Common Pleas No. 2,
For Philadelphia County.

IN EQUITY.

THE CITY OF PHILADELPHIA,
Trustee under the Will of STEPHEN
GIRARD, deceased,

Plaintiff,

vs.

THE MAXIM ELECTRIC LIGHT
AND POWER COMPANY,

Defendants.

To the within-named Defendants:

You are hereby notified and required, within
fourteen days after service hereof on you, ex-
clusive of the day of such service, to cause an
appearance to be entered for you in the Court of
Common Pleas No. 2, for the City and County of
Philadelphia, to the within Bill of Complaint
of the within-named complainant, and to observe
what the said court shall direct.

Witness our hands at Philadelphia, this
day of May, A. D. 1883.

FRANCIS E. BREWSTER,
F. CARROLL BREWSTER,

Solicitors for the Complainant.

NOTE.—If you fail to comply with the above
directions, by entering an appearance in the
Prothonotary's office, within fourteen days, you
will be liable to have the bill taken pro confesso,
and a decree made against you in your absence.

L83

Law Department,
Times Printing House,
725 & 727 Chestnut Street,
Philadelphia.

IN THE COURT OF COMMON PLEAS NO. 2.
OF PHILADELPHIA COUNTY.

SITTING IN EQUITY.

BETWEEN

THE CITY OF PHILADELPHIA, trustee under the will
of STEPHEN GIRARD, deceased, owner of prop-
erty and buildings thereon, fronting on Delaware
Avenue between Market and Arch Streets, as well
for themselves as for others of like interest who shall
come in and contribute to the expense of this suit,

Plaintiff,

AND

THE MAXIM ELECTRIC LIGHT AND POWER
COMPANY,

Defendants.

To the Honorable the Judges of said Court :

Your orator complains and says :

I. That your orator is the owner of properties situated
on the west side of Delaware Avenue between Market
and Arch Streets. The said properties, with the buildings
erected thereon, have a frontage on the west side of Delaware
Avenue of two hundred and nine feet, and are numbered
10, 12, 14, 16, 18, 20, 22, 24, and 26 North Delaware
Avenue.

II. That the defendants were created a body politic and corporate under an Act of the General Assembly approved April 29, 1874, entitled "An Act to provide for the incorporation and regulation of certain corporations," and in accordance with the provisions of said Act received Letters Patent, dated the eighth day of September, A. D. 1881.

III. That under and by virtue of said Letters Patent the said defendants are authorized and empowered to engage in and carry on the business of buying, manufacturing and selling machinery for the production and distribution of electricity and of producing electricity and selling and furnishing the same for light, heat and power, or for any other purpose.

IV. That by an ordinance of Select and Common Councils of the city of Philadelphia, entitled, "An Ordinance to authorize the Maxim Electric Light and Power Company "to erect poles, run its wires, and to lay its conductors "under ground, in, through and over and under certain "streets of the city of Philadelphia," approved June 21, 1882, the said city has authorized the said defendants to run its wires for the purpose of furnishing the city and the public with light by electrical currents, and to that end to erect such posts and poles as may be necessary, or to lay tubes, cables or wires underground in, through and over the following streets of the said city of Philadelphia, to wit: Between *Benbridge Street* and *Vine Street* from the *River Delaware* to the *River Schuylkill*, between *Vine Street* and *Green Street* from the *Delaware River* to *Twentieth Street*, and on the streets running north and south from *Washington Avenue* to *Columbia Avenue*. A copy of said ordinance is hereto attached as part hereof, marked "Exhibit A."

V. And your orator charges that the said defendants have erected wooden poles or posts along the west side of said Delaware Avenue, in front of your orator's said properties, and have suspended, or are about to suspend, therefrom, one or more electric wires.

VI. And your orator further charges that the suspension of said wires in front of your orator's buildings is a nuisance, and that said wires are dangerous and will seriously impair the value of said properties, and your orator's use thereof.

That the presence of said wires strung in front of your orator's building will, in case of fire upon said premises, greatly interfere with the extinguishment thereof.

That the defendant's only authority for suspending said wires in front of your orator's buildings, is the ordinance of Councils above mentioned, and your orator denies that said city of Philadelphia can authorize the said defendants to impair or damage the use and enjoyment of your orator's said premises without making compensation therefor.

And your orator avers, that said wires can be laid in underground conduits so as not to interfere with your orator's proper use of said premises, and at the same time permit the said defendants to fully enjoy the privileges granted to them by the ordinance of Councils heretofore referred to.

Wherefore your orator prays that the defendants may, pending this bill, be specially and thereafter perpetually enjoined from suspending electric wires from or upon the posts or poles erected by them upon the west side of said Delaware Avenue in front of your orator's said premises, and from maintaining and operating any electric wires suspended in front of your orator's said premises.

FRANCIS E. BREWSTER,
F. CARROLL BREWSTER,
Solicitors for Complainant.

4
"EXHIBIT A."

AN ORDINANCE

To authorize the Maxim Electric Light and Power Company to erect poles, run its wires, and to lay its conductors underground in, through, and over and under certain streets of the city of Philadelphia.

SECTION 1. *The Select and Common Councils of the City of Philadelphia do ordain, That the Maxim Electric Light and Power Company be and is hereby authorized to run its wires for the purpose of furnishing the city and the public with light by electrical currents, and to that end to erect such posts and poles as may be necessary, or to lay tubes, cables or wires underground in, through, and over the following streets of the said city of Philadelphia, to wit: Between Bainbridge Street and Vine Street, from the river Delaware to the river Schuylkill; between Vine Street and Green Street, from the Delaware River to Twentieth Street; and on the streets running north and south, from Washington Avenue to Columbia Avenue. The said company shall keep the poles, posts, and fixtures erected by authority of this ordinance in good repair, and well painted with two coats of paint, duly lettered and numbered. And the said company shall be privileged to use and occupy such poles belonging to the city, on the line of any of said streets, as may be suitable for the purpose. The work herein authorized shall be done under the direction and supervision of the Superintendent of Police and Fire Alarm Telegraph, in accordance with the ordinance approved April 18, 1868, regulating the construction of telegraph lines through the city of Philadelphia; provided, however, That if Councils shall hereafter grant privileges to other electric lighting companies, such companies shall use the poles erected in pursuance of this ordinance by the Maxim Electric Light and Power Company, by paying their proportion of the cost of said poles. The city of Philadelphia shall have the right to place on the poles or posts of said company, from time to time, telegraph, or telephone wires, for police and fire purposes, without expense to the city.*

5
SECTION 2. The said Maxim Electric Light and Power Company shall give its bonds to the city of Philadelphia, in the sum of twenty thousand (20,000) dollars, conditioned that they will not merge with any other electric light, heat or power company in the city of Philadelphia. In case of said merger, the poles, posts, wires and fixtures erected by them shall become the property of the city of Philadelphia. And the said bonds shall prescribe these conditions, and the said Maxim Electric Light and Power Company shall place its wires underground over such routes as may be authorized by Councils when the underground system has been found to be effective. And said company shall, at all times, be subject to the provisions of the Constitution and laws of the State of Pennsylvania, and the ordinances of the city of Philadelphia, in all matters relating to telegraph, telephone or electric light, heat or power lines in said city, now in force, or which may hereafter be passed, regulating the construction, maintenance, taxation and license charges of same. The sum of fifty (50) dollars shall be paid into the city treasury by the said Maxim Electric Light and Power Company, for printing and advertising this ordinance. This ordinance, and the privileges granted thereby, shall be revocable at any time by the passage of an ordinance to that effect. *Provided*, that nothing contained herein shall prevent the city from granting like privileges to other companies.

WM. HENRY LEX,

President of Common Council.

Attest—JOSEPH H. PAIST,

Clerk of Select Council.

WILLIAM B. SMITH,

President of Select Council.

Approved this twenty-first day of June, Anno Domini one thousand eight hundred and eighty-two (A. D. 1882).

SAMUEL G. KING,

Mayor of Philadelphia.

THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

9 1883-04-21

NEW YORK

Apr 21 1883

Arch

Mr. Edison -

Can you give me
while I wait, an answer to the
following questions.

1. The cost of a complete plant for
town of 6 to 1000 inhabitants, 20 to 30,000

2. How many consumers or how great a
consumption (equal to feet of gas at 15
candle power) necessary to insure a
25% profit on cost of plant, 1600 lights,
3 1/2 hours daily average each lamp -
do more than this on your paper

3. What restrictions, if any, as to
capital stock of companies to be formed.
Not greater than earnings will pay 15%.

If it takes too long, will you send
me the answer down to my office so I need
get it to - tomorrow.

Sincerely
T. A. Edison

E. J. B. May

29

Leotlie May 12. 83

1883-05-12

any day in May you may
write to
Philada. 2039 Walnut St.
May 12. 1883.
Thos. A. Edison Eng.

Dear Sir,

The Board of Directors of City Trusts (of which I am a member), as Trustees under the will of Stephen Girard, have filed a Bill in Equity against the Maxium Electric Light Co. to restrain the use of over head wires in front of our property on Delaware Avenue in this City.

On the motion for a preliminary injunction made to day, we submitted the affidavits of Professors Barker & Cresson, and of Mess Brooks & Philips

electricians, together with a reference to your "interview" in the New York Herald of April 20" last -

Judge Hale expressed himself as much impressed by the evidence that the over head system was dangerous to life and property, and after placing the defendants upon terms not to proceed with the work for the present, instructed our Counsel to obtain all the information upon the subject which he could, and he would set the case down for argument before a full bench at an early day -

It is needless to say that your views, in legal form, would be of great importance; and I write to ask whether you could conveniently visit Philadelphia for a single day, this month, (of course at our expense) or that you will name a day upon which your testimony may be taken in New York.

Trusting you will appreciate the motive which prompts this request I am

Very Respylly Yrs

Charles H. D. Collins

29
1883-04-04

Edison on wires

CONSULATE-GENERAL OF THE UNITED STATES OF AMERICA,
53 Old Broad Street, London April 4, 1883.

CHARLES H. T. COLLIS, Esq.,
2039 Walnut Street, Philadelphia.

DEAR SIR:—I beg to acknowledge the receipt of your letter of the 17th in reference to electric-lighting of London. I referred your questions to the chief engineer of the Edison Electric Light Company, Viaduct, London, who informed me in reply that all the wires for street lights are underground (a fact which is true of all telephone and telegraph wires in London); that the system works satisfactorily in everything except the matter of expense in tearing up the streets; and that the usual system is to lay the wire eighteen inches below the pavement, and two feet from the curbstone. It may be well to add that Parliament last year passed the general "Electric Light Act," giving privileges to the companies at the request of municipal corporations to lay wires in this way, although the temporary inconvenience to street traffic is sometimes very great.

Had I more time it would give me great pleasure to give you a fuller description of the matter, which your request for answer by return mail prohibits.

I remain, sir, your obedient servant,

EDMUND J. MOFFAT,
Deputy Consul General.

WHAT EDISON SAYS.

N. Y. Herald, April 20, 1888.

"Speaking of the number of new electric light companies which are springing into existence," said Thomas Edison to a HERALD reporter yesterday, "I may safely say that every company that strings its wires on poles is adding additional dangers to the public safety. A law compelling all electric light companies to place their wires beneath the ground would certainly be a prudent enactment. These wires have been the cause already on several occasions of serious peril.

"I know that scarcely a day passes without some warning being given of the danger of the arc light wires running through the air. Wherever these wires are suspended from telegraph or telephone poles they are liable to cause a fire. For should the current be diverted—and this might occur from the slightest contact—the heat would be sufficient to consume telegraph and telephone instruments, and set fire to any ordinary material that might lie near at hand. Some weeks ago a fireman, in this city, attempted to remove the release key of a fire alarm box. As he touched the key he received a severe shock. There is every reason to believe that in this case the fire telegraph wire has become crossed with an electric light wire, and the current had thus been diverted. Had the ground upon which the fireman stood been damp, or had the soles of his boots been wet, the chances are that the current going through his body would have killed him on the spot.

EDISON SOUNDS A WARNING OF DANGER.

"Not long ago the accidental contact of an electric light wire with a fire service telegraph wire resulted in the destruction of the electro-magnets in a score of fire boxes in the

lower portion of the city, and a complete interruption of the fire alarm signals in that section ensued and lasted until the electro-magnets had been replaced. Again, at a fire in Fourteenth Street, some broken telegraph wires in front of a building fell across an electric light wire. A fireman caught hold of these telegraph wires in the effort to disengage the hose. He received a terrific shock. The heated telegraph wires had burned through the insulating cover of the electric wire and contact had been established. Some months ago, as you must remember, as much publicity was given to the occurrence, a workman in the employ of one of the companies climbed a pole for the purpose of mending a wire. A short time afterward his dead body was found clinging to the pole. He had touched the wire and had received a shock which had killed him. And what wonder? Fourteen hundred volts are dangerous, and the arc light companies rarely run any lower than this and run all the way up to two thousand volts. I do not like to say very much on this subject for fear of alarming the firemen. And it is certainly calculated to alarm a man when he learns that the slightest contact of his person with a wire may be as deadly as a shot from a cannon."

"What means can be devised to obviate this danger?"

"Well, the best means I know of and have said is to put all the wires under ground. But the arc light companies say they cannot afford to do this. To put the wires under ground costs in all about fifty cents a foot. To run the wires through the air does not cost more than five hundred dollars per mile. These companies are not doing enough business to enable them to stand this difference in expense."

29

*Opinion on
Underground
conductors*

PHILADELPHIA, April 8, 1883.

TO THE BOARD OF DIRECTORS OF CITY TRUSTS:

Gentlemen:—In support of my amendment that the wires shall be placed underground for the electric lights to be erected in Delaware Avenue under the resolution now before the board, I submit the following opinions.

Respectfully,

CHARLES H. T. COLLIS.

FROM PROFESSOR BARKER.
3909 LOCUST STREET,

PHILADELPHIA, April 5, 1883.

Dear Sir:—In reply to your note of to-day, I have to say that in my opinion it is entirely feasible to place electric light conductors underground.

Truly Yours,

GEORGE F. BARKER.

CHAS. H. T. COLLIS, Esq.,
138 South Third Street.

THE DEPARTMENT OF THE
POLICE AND FIRE ALARM TELEGRAPH.

Office of the Superintendent,
South-west Corner Fifth and Chestnut Streets,
PHILADELPHIA, April 6, 1883.

GENERAL C. H. T. COLLIS,
Board of City Trusts.

Dear Sir:—I have your note of March 22d, and in reply I would say that it is not only feasible to put the wires for electric lights underground, but I consider it the only

proper and safe mode to adopt. In Europe all the electric light conductors are underground. I have just successfully laid underground nearly six hundred feet of electric light cable, connecting the two stores, Nos. 602 and 628 Chestnut Street. There would be no difficulty whatever in placing all the wires underground, which you need to light Delaware Avenue, and I have no doubt you could get a guarantee that they would need no repairs for years.

Very respectfully,

W. J. PHILIPS,
Superintendent.

PHILADELPHIA, March 28, 1883.

CHARLES H. T. COLLIS, Esq.:

Dear Sir:—Your favor of yesterday is at hand. In reply thereto, I beg leave to state, that having spent a large portion of the past five years in London, Paris, Brussels and other European cities, I am quite familiar with every system of electric lighting abroad. I was present by invitation at the inauguration of the Siemen's system, the British electric light system, and the Anglo-American system in London.

The electric light is used extensively in London for street lighting, especially in the region of Westminster; the Thames embankment, Westminster, Waterloo and Blackfriar's bridges, Queen Victoria Street, Holborn Viaduct, Chancery, King William Street, and generally in the old city proper.

For the distribution of electricity to these street lamps, cables are used and buried in the streets just beneath the pavement. They are opened and closed between the hours of twelve at night and half-past four in the morning. The same method is adapted in Paris and Brussels.

It has often been stated that electric light wires are laid in the sewers in Paris; but this is a mistake. The sewers are of solid masonry, and the places of egress average four hundred metres apart. They are upon an average

twenty-five feet below the surface and in the centre of the street. It can be seen at once that they are not adapted for the use of electrical conductors such as are used in Avenue de l'Opera.

The conductors used in Europe are insulated with gutta-percha, and are available in this country, for there is nothing to hinder their use except a slightly increased first cost. I believe them to be much cheaper in the end. There is another advantage in placing conductors under ground; it almost entirely removes the source of danger by which numbers have lost their lives.

I am very respectfully yours,

DAVID BROOKS.

BUREAU OF EXPERIMENT
AND
CHEMICAL LABORATORY,

No. 417 Walnut Street.

PHILADELPHIA, April 2, 1883.

Dear Sir:—Yours of 31st March, in reference to the use of underground wires for electric lights, is at hand.

If the conductors which are to carry currents for electrical lighting are placed in conduits separate and apart from those used for telegraphic and telephonic purposes, the underground system is to be preferred to that overhead on poles.

I do not know of any reason why all electrical conductors should not be placed underground, and suppose that the additional expense incurred in laying conduits is the cause which prevents the universal adoption of that method of distribution.

In the preparation of the ordinance "to regulate the introduction of underground conduits, electrical cables," etc., approved, June 21, 1882, the subject of the conductors of currents for electrical lighting was carefully considered, and soon thereafter it was thought proper to direct that prior

to January 1, 1886,—all poles and wires erected for electrical lighting purposes should be removed from the streets of the city.

I am of the opinion that all conductors for electric lighting purposes should be laid underground in proper conduits to insure the greatest safety and security to the public, and a more certain service to the users of electric lights.

Respectfully Yours,

CHARLES M. CRESSON, M.

To CHARLES H. T. COLLIS, Esq.

OFFICE OF FIRE MARSHALL,

CITY OF PHILADELPHIA.

S. W. Corner Fifth and Chestnut Streets,

PHILADELPHIA, April 5, 1888.

CHARLES H. T. COLLIS, Esq.:

DEAR SIR:—In answer to yours of April 5, 1888, I respectfully say that, in my opinion, all telegraph wires erected on poles, along the sidewalks of the public streets of the city, are a great nuisance, and excessively inconvenient, and interfere with the operations of the fire department in case of fires.

Very respectfully,

CHARLES W. WOOD,

Fire Marshal.

29
1883-05-14

May 14, 83
Lyon

Hoboken
May 14, '83

Mr Edison

Dear Sir:-

In answer to your note of
May 12 with reference to
small storage batteries for
storage, let me state:-

Prof. Norton will not return
from Cincinnati in Western
day. I think it certain that
he will want to get up some
battery for use. In the mean-
time, if you please, send a
few samples of the lamps to
be run and test the time
they are expected to be run
and we will begin ex-
periments.

Respectfully

W E Hayes

London May 1883
 My dear Sir

This is Sprague - He would probably tell you that much - but he couldn't tell you that the pay of an Ensign in the U.S. Navy isn't sufficient to keep a man in idleness long on shore - and that I have kept him here so long to have him try the Hopkinson dynamo for me - that he is dead broke and as I am too, I had to borrow 25 £ from Bailey to get him afloat - You will therefore know that his pocket is empty when he comes to you - Don't mention this however as I promised him I wouldn't say anything to you on the subject

He will tell you of the situation here and why I don't write.

I am not taking out patents on the Greenfield Tape or anything else either here or on the Continent I haven't the money - & no one else will pay for them - When I get in control at 74 Coleman St. (June 1st) - I'll have the whole Patent business adjusted so far as England is concerned -

And I'll write you fully on all subjects. At present I am simply overwhelmed. I can't pay a short-hand man. I'm not in the office, and my local work is so heavy I have simply to let my home correspondence go. At the Dogs -
 Phil Benjamin I countermanded the whole order for Glacé flowers.

Don't fail to send over before June 15th - C. Lamp, Plastic Tar etc. strictly according to Patent - made without heating during exhaustion & C. with "heating" - If those not heated last 1/2 an hour or so they will serve the purpose very much better. On the point whether or no this Plastic Tar without the heating process will make a Lamp that will burn for even a half hour -

All the Big Question of Patent Fight -
 - Reorganization into a Public Co.
 - Amalgamation with Penn. & Co.
 are to come up immediately our new Board is in office. We shall have to make some important modifications of our views of matters & things. We can get ourselves into a strong financial position & be prepared for surprises -

3/

The Board of Trade is going to
 Give us our Provisional Order
 for our entire District nearly
 a Square mile - An Idea has
 occurred to me - Would Clarke
 come over here to Engineer it?
 He would suit here - & I could
 get him a handsome salary -
 Its a big job - The money will be
 found in full to complete it
 Hopkins will act as Consulting
 Eng^r - only - think it over - perhaps
 it would suit you to have him
 come?

Chinook - but here
 Chinook is a damn fool -

Arnold White spoke for 1 1/2 hours
 to a full Board to prove that
I was not infallible - When he
 got done I simply admitted it
 & then proposed we give our
 Attention to more important
 matters - which was done -

He has since been sick in Bed -

Your new Lamp is a failure
to date You owe me 100\$ -

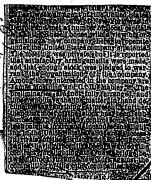
Yours Faithfully - no
 that's English -

"Yours Truly"
 R. Johnson

Thos. A. Edison 1883-05-18

Dear Sir - Please give me
your opinion regarding the
connection of Mr. M. S. Millan
with the interests set forth below
Oblige Yours most truly

John R. Mankie
374 Cass Ave.
Detroit
Mich.



RECEIVED
MAY 21 1883
ANSWERED
May 21/83

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May 18 1883

John R. Markle

Wants Y.A.B.
opinion on slip
inclosed.

1883-05-18

Record of deaths
from illuminating gas
1878 to date

May 18. 1883

1883-05-18



Coroner's Office,

13 & 15 Chatham Street,

Adjoining East River Bridge,

New York, _____ 1883.

Record of Deaths from Illuminating Gas
from 1878 to 1883. inclusive to date and
number of inquests of all kinds held
each year.

~ 1878 ~

Total number of Inquests. 3130.
Deaths from Illuminating Gas 2.

Eng. No. 339. 4th Quar. Mann John. 30 yrs. 31 Barreny. Nov. 7
" 411 " " Lacena Lorenzo. 17. 21. E. 4th St. " 16.

~ 1879 ~

Total number of Inquests. 3128.
Deaths from Illuminating Gas 2.

Eng. No. 61. 1st Quar. Schroeder Jimmy. 6 yrs. 331. E. 15th " Jan 5
" 135 3rd " Nichols Leroy F. 36. St. Cloud Hotel Apr 18

1883-05-18



Coroner's Office,

13 & 15 Chatham Street,

Adjoining East River Bridge,

New York, _____ 1883.

~ 1880 ~

Total number of inquests. 3762
Deaths from illuminating gas. 11.

Aug. 16 th 1 st Des.	McCurt Sarah.	20 yrs.	Jan 21
" 504 " "	Parker. Livia.	65.	Trench's Hotel May 20
" 305 2 nd "	Doran John.	45.	115 W. 22 nd May 6.
" 671 " "	Lanson Adam.	53.	713 Bway Jan 13
" 853 3 rd "	Elphry Jacob.	52.	84 Chatham Sep 19
" 292 4 th "	Anguino Sophia	21.	Ansor House. Oct 21
" 330 " "	Blumenweis Bertha	17.	Spring & Crosby 223 Henry Nov 4
" 482 " "	Sebo John.	19.	62 Bway. " 18
" 682 " "	Coleman Thomas.	44.	Putnam House. Dec 3.
" 787 " "	Sherwood Samuel.	44.	Charles Hotel. Canal St. " 14
" 873 " "	Stimwell Albert.	North River Hotel.	Barclay St. " 24.

~ 1881 ~

Total number of inquests. 3994.
Deaths from illuminating gas. 15.



Coroner's Office,

13 & 15 Chatham Street,
Adjoining East River Bridge,

New York, _____ 1883.

1881

Aug. No. 1	1 st Dec.	Nolan Thomas	35. yr.	10. First st.	Jan. 1.
" " 52	" "	Reynolds. Renss.	28 "	28. Bannet.	" 3.
" " 178	" "	Lynch Michael	31 "	332 E. 27 th	" 13
" " 467	" "	Wiss Barbara	19 "	955. 3 rd St.	Feb. 12
" " 468	" "	Braunsdorfer Henrietta	16 "	" "	" "
" " 271	2 nd	Berthien Gustav	30 "	310 Broome.	Apr. 2
" " 118	" "	Schmidt Daniel	28 "	395 Bancey.	" 10
" " 271	" "	Swensen Sophia	28 "	200. W. 56 th	" 25
" " 371	3 rd	Monnot J. N.	50 "	6 W. 11 th	Jul. 29
" " 440	" "	Otterson Louis	43 "	311. 4 th St.	Aug. 6
" " 485	" "	Osborne J. D.	27 "	" "	" 8
" " 212	4 th	Green Abijah	75 "	300. W. 125 th	Oct. 20
" " 399	" "	Baile Joseph	40 "	405. 6 th St.	Nov. 7
" " 598	" "	Reid James	56 "	387. 4 th "	" 21
" " 806	" "	Zimmerman Wm	30 "	Foot W. 46 th	Dec. 13

1882

Total number of inquests.
Deaths from illuminating gas.

4067.
19.

1883-05-18



Coroner's Office,

13 & 15 Chatham Street,

Adjoining East River Bridge,

New York, _____ 1883.

1882

Eng. No. 301.	1 st Quat.	Coyle Michael	48 yrs.	28. Boverly.	Jan. 24
" " 531.	" "	Dusand Jas. J.	54	Occidental Hotel	Feb. 16.
" " 644	" "	Stryker Richard	38	48 Chatham Ave	Mar 1
" " 681	" "	W. Hoffman Fred. Jr.	23	109 Barclay.	" 2
" " 713	" "	Ker. Ellen	78	245. W. 41 st	" 4
" " 736. 2 nd	" "	Covert Philetus	51	Trench's Hotel	Jun 1
" " 744	" "	Meek Ren. Wm	24	3. Morris st.	" 1
" " 757	" "	" Mary	18	" "	" 1
" " 1009	" "	Thomas. Wm	55	38. Boverly.	" 26
" " 718. 3 rd	" "	Hottenroth Cath.	44	297 "	Aug 22
" " 931.	" "	Parant Josephine	31	Sturtevant House	Sep 18
" " 7 4 th	" "	Walcott Jane. E.	16	14. W. 28 th	Oct. 1
" " 56	" "	Stewart Emma	20	90. Eastlandt.	" 7
" " 381	" "	Kelly. Timothy	45	2299. 4 th St.	" 27
" " 349.	" "	Rohan Mary	20	240. E. 86 th	Nov. 21
" " 422	" "	Lamy Daniel	52	48. Chatham	" 9
" " 462	" "	Concannon Hugh	23	25. 3 rd St.	" 13
" " 463	" "	" Margaret E.	22	" "	" "
" " 768	" "	Mahoney Honora	17	4. Attorney	Dec 15

1883-05-18

Coroner's Office,

13 & 15 Chatham Street,

Adjoining East River Bridge,

New York, _____ 1883.



1883

Deaths from illuminating gas.

5.

Inq. No. 101.	1 st Quar.	Culver Archers. L.	58 appt.	92.	Costello. Jan. 8
" " 213	"	Scholfield Arthur	83	" 34.	W. 11 th " 19
" " 299	"	Tourmonski Mr.	28	" 30.	Barnes " 27
" " 654	"	Lawrence Wm. J.	59	" Putnam House.	Mar. 1
" " 828	"	Mulcahy. Wm.	39	" 48.	Chatham " 17

Form No. 100 (Rev. 10-1-10) **CABLE MESSAGE**
THE WESTERN UNION TELEGRAPH COMPANY.

"An CABLE MESSAGE received for transmission must be written on the Message Blanks provided by this Company for that purpose, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message."

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

16 189 187 11 London 1897
 Received at 191 BROADWAY

Received at May 24 1896

Dated
 To Sevenfour my
 Please give me a full insight
 to new Conductor System
 Thos A Edison 65-50-2

To guard against mistakes on the lines of this Company, the sender of every message should order it repeated; that is, designated back from the sender of the message to the Originating Office. For each repeating, the sender will be charged in addition, one half the normal tolls of this Company, on that portion of its line which each message traverses.

This Company will not assume any responsibility in respect to any Message beyond the termination of its own latest and final transmission. The Company agrees, however, that in the event of any delay in the transmission of a Message, the Company will be responsible for the delay beyond the termination of its own latest and final transmission. The Company will not assume any responsibility in respect to any Message beyond the termination of its own latest and final transmission. The Company agrees, however, that in the event of any delay in the transmission of a Message, the Company will be responsible for the delay beyond the termination of its own latest and final transmission.

any Communist in need to be liable for damages in any case. You can claim to be a writer, with thirty days after the ending of the measure.

3,
May 24, 1893.

E. H. Johnson
to

SAC requests him to give Mr. Donald full insight to new conductors system

Handwritten notes in cursive script, likely bleed-through from the reverse side of the page.

1883-05-24

The Mercantile Fire Insurance Company

No. 166 BROADWAY.

RECEIVED
MAY 25 1883
ANSWERED

May 15/83
FILE NO.

New York, May 24/83

Thomas A. Edison Esq

Dear Sir

In reply to your favor of the 23rd inst. I would state, that it would give me great pleasure to write you as you request, but for the fact, that it is a rule of our N.Y. Bd of Fire Underwriters, to refuse to endorse any particular patent, by name, and as Chairman of one of the Standing Committees of the Board I must obey the Rules

I would add, that personally I think the Rule should be reconsidered, and efforts are now being made to bring such action about, but until that is done, you will see that it would be improper for me to act contrary to the expressed wishes of the Board. Please very truly
J. H. Thompson
Chairman

Please do not publish this.

RECEIVED
MAY 25 1883
ANSWERED

THE GENERAL COMMITTEE
ON
FILE NO. 133...
UNDERGROUND COMMUNICATION,

115 BROADWAY, NEW YORK.

THE GENERAL COMMITTEE:

HENRY L. BAILEY,
Electrician, The Time Telegraph Company.

ALBERT B. CHANDLER,
President, The Fuller Electrical Company.

WILLIAM A. CHILDS,
Manager, The Law Telegraph Company.

GROVER CLEVELAND,
The Governor of the State of New York.

HENRY CUMMINS,
Vice-President, The Postal Telegraph Company.

LEONARD E. CURTIS,
Secretary, The United States Electric Lighting Company.

JOSEPH P. DAVIS,
Vice-Pres't The Metropolitan Telephone and Telegraph Company.

SHERBURNE B. EATON,
President, The Edison Electric Light Company.

FRANKLIN EDSON,
The Mayor of the City of New York.

CHARLES R. FLINT,
The Weston Electric Light Company.

ROWLAND R. HAZARD,
President, The Gramme Electrical Company.

EDWIN HOLMES,

President, The Burglar Alarm Telegraph Company.

CLARK B. HOTCHKISS,

Vice-President, The Mutual District Telegraph Company.

WILLIAM M. IVINS,

President, The Jablockhoff Electric Lighting Company.

FREDERICK H. MAY,

General Manager, The American Rapid Telegraph Company.

THOMAS J. MONTGOMERY,

The Brush Electric Company.

HENRY MORTON,

The Electrical Accumulator Company.

GARRET S. MOTT,

General Superintendent, The Bankers' and Merchants' Telegraph Company.

HENRY W. POPE,

Vice-President, The Manhattan District Telegraph Company.

CHARLES W. PRICE,

Manager, The Baltimore and Ohio Telegraph Company.

AUGUSTUS C. RICHARDS,

Treasurer, The Automatic Signal Telegraph Company.

JOHN B. SCOTT,

The Commercial Telegram Company.

J. ELLIOTT SMITH,

Superintendent, The City Fire Department Telegraph.

ELIHU THOMSON,

Electrician, The Thomson-Houston Electric Company.

OFFICERS:

JOSEPH E. DAVIS, *Chairman.*

ROBERT W. BLACKWELL, *Treasurer.*

WILLIAM C. BEHRENS, *Secretary.*

SUB-COMMITTEES.

ON ELECTRICAL AND MECHANICAL DEVICES:

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HENRY W. POPE,

ALBERT B. CHANDLER,

GARRET S. MOTT,

JOSEPH P. DAVIS,

ELIHU THOMSON,

FREDERICK H. MAY,

J. ELLIOTT SMITH,

THE GOVERNOR AND THE MAYOR, *Ex-officio.*

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ON BUSINESS ORGANIZATION:

ROWLAND R. HAZARD, *Chairman,*

AUGUSTUS C. RICHARDS,

CHARLES R. FLINT,

THOMAS J. MONTGOMERY,

CLARK B. HOTCHKISS,

THE GOVERNOR AND THE MAYOR, *Ex-officio.*

ROBERT W. BLACKWELL, *Secretary.*

29.
Circular of the General
Comm. on Underground
Cables

Extract from Invitation, April 13th, 1883. Commercial

"An ideal system is one under which every house may be supplied, on demand, with every form of electric connection, without delay, undue cost, or disturbance of the streets. If a Burglar Alarm, Messenger Call, Telephone, Incandescent Electric Light, Arc Light, Time Wire, Stock Register, Lifting and Pumping Power, or Telegraph connection is desired, the attachment ought to be immediate and without removal of the pavement.

"There is no existing system under which this can be effected, but there are about three hundred and fifty patented devices, of more or less value and utility, which deal with insulation, induction, mechanical arrangements for expansion and contraction, supporting conductors in the conduits, discharging and conducting surplus electricity, permitting additions and service connections to be made, and giving easy access to particular parts for repair. Some of these may be essential, and are sure to be useful in the development of an effective working system."

Resolutions Adopted April 20th.

"*Resolved*, That, in the opinion of this meeting, the time has arrived when it is expedient to make an exhaustive examination of all devices and inventions pertaining to the subject of underground electrical communication, with a view to determine whether any inclusive system can be found which will enable the electrical corporations to establish such communications.

"*Resolved*, That it is the sense of (his meeting that the public desire to relieve the thoroughfares from poles and wires is quite in accord with the wishes of the corporations, and that the true interest of the shareholder is to be found in a permanent, inclusive, and protected system.

"*Resolved*, That the problem presented to the corporations and the electrical engineers is complex and difficult, and in the opinion of this meeting has not yet been fully solved; that any system to be adopted must combine the highest efficiency with reasonable economy, and serve inclusive interests; that while it is perhaps possible for trunk-line telegraphs to avail themselves of existing devices, it is not possible, in the present state of the art, for services connecting every house in the city so to do, without an expenditure so vast as to be prohibitory in most instances, and that therefore hasty compulsory legislation is to be deprecated as being destructive to useful and indispensable public conveniences."

Instructions to the Committee on Electrical and Mechanical Devices.

It shall be the duty of the Committee on Electrical and Mechanical Devices to examine inventions in use, or that may be presented to them; to give notice to inventors as to the nature and extent of its requirements, and state the problem to be solved, with the purpose of concentrating inventive effort to a practical direction; and generally, to consider and report, for the instruction of the General Committee, the state of the art, that the difficulties are or are not surmounted, or, in the judgment of the Committee, surmountable; and, in default of an ideal and perfected system, to make such recommendations to the General Committee as may in its estimation seem worthy of adoption as providing a partial or temporary remedy for the difficulties encountered, pending the invention and perfecting of a satisfactory system. To report in the first instance to the Committee on Business Organization.

SIR:

I send this circular-letter for your information, and will be pleased to lay before the Committee any plans which you may submit for its examination. It is requested that all communications be addressed to

WILLIAM C. BEHRENS, Secretary,
115 BROADWAY, ROOM 47.

To

1882.06-22
What is wanted is
a Carbon ~~off that is~~ conductor 91 Wilson St.
the poorest conductor the
highest temperature Brooklyn N.Y.
E
June 2/83.

Will kindly inform
me as to the temperature of the Car-
bon filaments in your lamps when
in ordinary use; and whether it
would be an advantage in incan-
descent lights, if the filaments or con-
ductors could be made of a material
that would stand a higher degree
of heat ^{than} the present vegetable carbons,
while also being of tough or fibrous
nature permitting it to be worked into
fine threads or forms, and an
Equally good Conductor of Current.

I may be able to show you some
thing desirable in this line

Yours truly
Levi L. Jones

Edison Electric Light Co
New York

On some proposed ways whereby the Efficiency of the Incandescent Electric Lamp may be improved.

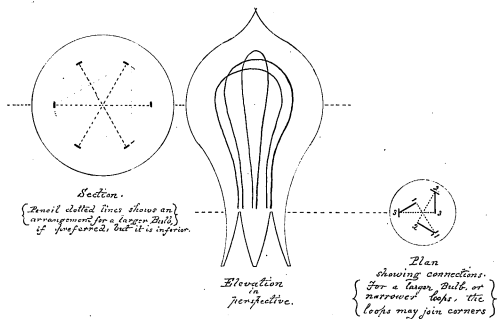
He may regard this lamp as a "Light Engine", whose office is to transfer motion into light, and its "Dynamic Efficiency" is measured, in degree, (not in kind) by the yield in candle-power for one horse power of energy expended.

But the performance of this duty sacrifices the life of the machine itself, from excessive strain or overwork, Hence its longevity, relative to its first cost, constitutes another and distinct efficiency, which may be called its "Mechanical Efficiency", and embraces all the factors which affect its durability, and cost.

Mechanical Inefficiency is exceptional, repairable, and inexpensive; but Dynamic Inefficiency is radical, wasteful, and a constant source of loss to the consumer.

The Mechanical Efficiency.

First. I propose to use 3 loops, instead of only one loop, and arrange them symmetrically, one above the other, radiating, at an angle of 60° apart, around the vertical axis of the present sized glass bulb, as shown in the accompanying sketches. In the "Plan" the corners 1, 2, 3 of the triangle, represent the points where the platinum wires pass through the glass, and



are bent at right angles to form half-sides of the triangle. The ends of each carbon loop (1,1), (2,2), (3,3) join one angle to its opposite sides. This method of inserting the loops has the following advantages:

1. The expense of one extra platinum connection (making 3 in all, where now there are two) is only a trifle, and the shadows of the non-luminous loops will be small, as they will only be penumbras, by position and by irradiation.
2. The Lamp will last 1000 hours, at the present candle-power.
3. When more light is desired, a turn of a cock will switch in a second loop or possibly a third loop, but the latter I do not count on.
4. When two loops are incandescent, the illumination will be uniform from all visual angles. I do not claim multiplying loops, but I claim the method of arranging 3 loops, as described.

Dynamic Efficiency.

If we call the efficiency of a good Arc Lamp, where one horse power yields 2000 candle power, one, then that of the Incandescent Lamp, in its present state is about $\frac{1}{18}$.

If one employs the latter Lamp as a Calorimeter and compares the measurements of the heat generated with those of the corresponding light by the Photometer, we collect a series of facts. Laying down graphically these facts we get a curve, the abscissas of which represent thermal units, and the ordinates candle-powers. We observe that the rate of curvature goes on increasing up to a certain limit, when it becomes constant. While this point is far below any practical experience, yet we know from the Arc light that it would be reached at 2000 candle power, if the carbon loop would endure.

This curve, in its exact formula, I do not know, but below 50 candle power, we may assume that $y = x^3$, so that, If $\frac{1}{3}$ of a Unit current yields 1 candle power, then 1 " " " 15 " " and $1\frac{1}{2}$ " " " 50 " " or, if we divide the loop into 3 lamps (as in Fig. 2) " " " 150 " " (so as to keep the resistance the same) we get 3 lamps of 16 candle power each, for an increase of $\frac{1}{2}$ in the current, or the Efficiency is doubled.

Whether it is possible to secure the advantage thus clearly proven to exist, must depend on further development. I think the limit has been reached with filaments of amorphous carbon.

I propose the use of metalloidal carbon, so called because it has the metallic lustre in an eminent degree, and, in an inferior measure, metallic cohesiveness and non-porosity.

Its durability at high temperatures would be attended with several incidental advantages.

1st. The light, for equal candle powers, would be whiter, purer and more agreeable to the eye, than the yellow tint of a lower temperature.

2^d. It would possess, in common with platinum, the merit of a polished surface, ^{and more} of that power to convert heat rays into luminous ones, which we call phosphorescence.

Graphite. Foil.

I propose First, the use of selected specimens of Foliated Graphite, of special quality and extra large size, to answer the purpose intended. I inclose a specimen. It is confessedly imperfect, but it shows possibilities in this direction, and careful investigation might bring to light much larger and more perfect samples of Nature's resources. This specimen came from Ceylon. The detached pieces are

are very pliable and tough. They will resist a considerable direct pull, between the fingers, if fairly made, as you will find on trial. In this respect they are much superior to amorphous carbon.

The Cabinet of Mr. O. Cleveland, President of the Dixon Crucible Co Jersey City, may contain some superior specimens. This Co. works the graphite mines at Ticonderoga, Essex Co., N. Y. A visit to the mine itself, and inquiries of the Superintendent might throw light on the points to be ascertained, which could not be answered satisfactorily, otherwise. Mr. H. E. Hadden could work up the mineralogy for you, I suppose.

Foliated graphite is found in Chester Co., Pa., at Uchland, worked by the Eagle Plumbago Co.; also in Canada, &c. There is also a locality in the neighborhood of Johnsbury, Warren Co., N. Y. In his State Geological Report, Prof. Emmons says, "A beautiful form of this substance exists in Johnsbury. It is in six-sided tables, and perfect in form. The surfaces of these tables are marked by fine lines, indicating the rhomboid or primary form to which the species belongs. These tables are disseminated in primary limestone, and some are compound or twin crystals. This locality appears to be the only one yet discovered which furnishes perfect

crystalline forms of this substance."

The New York Branch House of A. H. Haber of Nuremberg, Bavaria, (who work the famous graphite mine of Mt. Elbert in Siberia) may also obtain for you peculiar products in the direction sought.

Preparation.

The crude product of the mine would require preliminary treatment.

1st Being of a micaceous structure, it should undergo splitting by hand or machine, to reduce it to a uniform thickness.

2nd It is next digested with hydrofluoric acid, and then with hot sulphuric acid, to remove earthy matter, washed and ignited.

3rd It is next beaten between skin or parchment sheets, like gold foil, or rolled in Jeweller's rolls, or compressed between surface plates, in an Hydraulic Press, to remove all crystalline lines and seams.

4th The sheets are now sheared into narrow strips for loops, and these strips are tested for tenacity, by causing them to lift a certain weight.

Artificial Graphite.

This may be obtained in various ways. Whether any process would yield crystalline plates, large enough and thick enough for making into loops, I am unable to say, except as to one.

Semi-Metallic Carbon

I propose Second, the use of a variety of carbon which is artificially produced, by the ^{joint} agency of heat and other obscure conditions.

On some specimens of gray over-cake, and on the retort carbon off gas works, blisters, or mammillary intumescences, are sometimes observed, having the color and brilliant lustre of mercury, but they are not flexible and soft like graphite, nor do they soil the fingers; although graphitic carbon enters into their composition, and possibly nitrogen, if nothing else.

The problem is, to determine the exact conditions which give birth to its formation, so as to produce it, at will, in films of any desired thickness, size, and uniformity.

I would not misquote, however, the language used by another, in describing such a film, when he said, "it possessed a greater degree of metallic lustre and whiteness than the purest silver." It is possible that this statement is not overdrawn, but I rather think it is.

This metallic carbon, if it could be produced, would probably answer for loops, better than graphite, or any other variety of carbon.

Porcelain plates (well enamelled,) and coated with lampblack over a petroleum lamp, and

highly heated, in close crucibles, might furnish an approximation, as will appear from the following extract:

John A. Winebrenner, June 5
"Turpentine (gum), in a glass tube, was placed in a crucible, and packed or covered with sand. After the flame had long ceased, it was found that the tube had melted, and was uniformly lined with a whitish, glossy matter, which could not be scraped off. It conducted electricity and the path of the explosion was luminous, as if composed of a series of points. Oil of turpentine and oil of olives furnished the same matter, and tubes coated with soot, and put in a crucible full of sand, and strongly heated, came out white, and conducted as before. With a less degree of heat, the black covering was changed to white, but it did adhere so firmly to the glass, and would not conduct.

"This coating vanished when the tube was made red hot in an open fire. Under a microscope, it looked exactly like metal, or rather some of the semi-metals, having a bright polish, though it soon became, as it were tarnished. Acids had no effect, nor had the magnet". Experiments and Observations on Different Kinds of Air, by Joseph Priestley, in 3 vols., Birmingham, England, 1790; vol 3. page 411. For stout films, this method would require repetitions.

John A. Winebrenner.

Mount Joy, Pa June 5, 1883.

70

June 13/13

J. Howell

re Weston machine

1873-00-13

June 13th

F. R. Upton, Eng.

Dear Sir: In the measurements of current at 8 P. M. at the Weston machine today, I could only get 52 Volts with all the load on - when I wanted 65 - I would like to give it another trial with the exciter speeded up and when I have more time -

1873-00-13

Since our conversation this morning I have thought of just the man for the traveling job you spoke of - a graduate of Rutgers - sharp - quick to comprehend and can hold his tongue like a clam and very gentlemanly - he was office boy for Mr Hoskins of Philadelphia for four months and did quite some talking and got an insight into electric light affairs since that he has been wireman for Van Drais and is now getting \$1.50 a day & expenses with Van Drais at Baltimore - he is a poor mechanic but was cut out for a lawyer - His address is John. K. How.

Yours

John M. Howell

Care H. A. Clark, Esq

5 Horn Building
Baltimore
Md

[JUNE 18, 1883]

~~Very truly yours,~~

D
1883
El. Lt.

~~June 18, 1883~~

3

John Hoskin, Esq.

6 Lodge Building,

Phila. Pa.

Dear Sir:-

Your favor of the 16th. inst. addressed to Mr. Edison came to hand this morning. Mr. Edison left here for Chicago yesterday and will not be back until towards the end of the week. My impression is that it would be impossible for him to find time to go over to Philadelphia to attend the meeting of the Committee which you refer to. I shall be in Philadelphia myself to-morrow or Wednesday, and will hope to have the pleasure of calling upon you.

Very truly yours,

OFFICE OF THE AGENCY
THE EDISON COMPANY FOR ISOLATED LIGHTING,

No. 6 LEDGER BUILDING,
Sixth and Chestnut Sts.

JOHN HOSKIN,
Agent for the
States of Pennsylvania, New Jersey
and Delaware.

Philadelphia, June 16 1887

Thomas A Edison Esq
New York

Dear Sir,

Genl. B. W. T. Bollie, who I believe has
written you before on the subject, has requested me
to ask you to name some time before July 1. Between
9 & 11, when it will suit you to come here, & meet
a Committee of Councils on the subject of under-
ground electrical conductors, & give them your
opinion thereon.

Genl. Bollie is interested in this subject,
as well as against the Maxim lighting of Delaware
avenue here - And he is giving me his best
aid to secure our lighting Girard College, &
grounds -

Awaiting your reply - Sam Younger, Mgr
John Hoskin



1883-06-19

June 18th

John A. Winchbrowner, Esq.

Mount Joy,

Lancaster Co., Pa.

Dear Sir:-

In reply to yours of the 18th, I beg to state that I received the needle which you sent me, but up to this writing we have been unable to make a loop out of it. We are going to make further experiments and will advise you of the result.

Very truly yours,

1783-06-15

Mount Joy, Lancaster Co. Pa.

June 15th, 1883

Thomas A Edison Esq.

65 Fifth Avenue, New York City

Sir:

I have not as yet received
any reply from you in answer to my
letter of June 6th suggesting some
improvements relative to the Incandescent
Lamp, and inclosing specimen of carbon.

Please let me hear from you, and oblige.

Yours Respectfully,

John A. Winebrenner.

1883-06-22

Answer Some time hence

Mount Joy, Lancaster Co. Pa.

June 22, 1883.

Thomas A. Edison Esq.

65 Fifth Avenue, New York City.

Sir:

Your note of June 18th has been received. I am not at all disappointed at your want of success in making a loop out of the sample of graphite I sent you. It served well enough to indicate the existence of a real foil, being a shadow of good things to come, and not the very image of the things.

We want a perfect film of graphite, as a sample, and preliminary condition, to test the fundamental question and vital point namely; Will it materially increase the Dynamical Efficiency of the Incandescent Lamp?

First Can we find in Nature such films ready made and fit for use? Probably we can. I have pointed out, in my former letter, certain sources which invite our search. I would suggest further that you consult that veteran and eminent mineralogist Prof. James D. Dana of Yale College & Prof. A. E. Foote, Dealer in Minerals, Philadelphia, and Prof. T. Harry Hunt of Moultrie. From Prof. Dana you could also obtain references to the Literature & Localities of foliated Graphite; for example, reports of visits

to the Plumbago mines of Ceylon in the "Annales des Mines", and other technical journals. This well known island, in the Indian Ocean, is perhaps the best place to look for success in seeking official Lamellar Graphite. Being a British Colony, most of its exports go to England. The Plumbago Concible Co. of Battersea are probably extensive consumers of Ceylon graphite. The New York & Custom Houses will show who are the American Importers. American residents and correspondents in Ceylon, as our Consul etc, might assist you in getting some very fine specimens from the miners and shippers, if they knew exactly what was wanted. Consult also "Ceylon, Physical, Historical &c", by Sir James Emerson Tennant; London 1859; in the Astor Library, probably.

Second. Can Art and man's device come to our aid and relief, and equal even the product of Nature's handiwork? Possibly it can. Let us see.

I now come to describe an artificial method, which was alluded to in my former letter as "one way".

In the "American Journal of Science" for January 1877, and for September 1877, you will find accounts of certain experiments on the production of Metallic Films, made by Prof. Arthur H. Wright, of Yale College.

My proposal is to apply his method, and

improve his primitive and diminutive apparatus of the Laboratory, to the economical manufacture, on a larger scale, of Graphite Films, of resplendent lustre, exquisite polish, uniform texture and cohesion, and of any desired thickness and length. The cost, and the cohesion and flexibility, are the chief difficulties to be apprehended and overcome. The term, "negative electrode" is to be taken, in what follows, in the same sense as used by Prof. Wright.

To accomplish this end, I propose,

1st, To employ a better hydrogen vacuum. The vacuum must conduct, but we can increase the electric leap, or disruptive discharge, by accumulating the tension. The degree of this void ought to be measurable, and maintained uniform during the progress of the electro-deposit. Chemically pure hydrogen gas can be obtained by heating formiate of potash with potash hydrate, or soda-lime.

2nd, To compare the films produced by varying the volume & tension (and time of deposit) of the current of the Secondary Coil.

3rd, To arrange, for the sake of economy, if possible, a number (two or more) of the Condensing plates or Electrotype, in a series, in the same circuit.

4th, Increasing the area of the positive ^{platinum} electrode, and distributing evenly to a surface or plate, and multiplying the number of the negative electrodes, or prints, in action at once.

5th, Imparting automatic motion to the Electrotype,

during deposition, to effect a uniform thickness.

This may be done by an electro magnet and gear wheels inside of the Receiver, or outside the Receiver, by a slow titting motion. Parts of the films requiring an extra thickness, can be so treated.

5th. The glass condensing plates to be of hard Bohemian ware; "cut" finish or lens-polish is not necessary, but a good surface is, without scratches. The bottoms of Beaker glasses would answer at first. No atmospheric dust or notes should be on these plates, or in the Receiver. They should be well cleaned (in caustic soda water) and rinsed; handled with forceps, & never with the fingers.

These backings can be dissolved off and separated from the films by hydrofluoric acid. These condensing plates might also be made of the best mica.

6th. The temperature of the Condensing Plates to be kept cold, by artificially refrigerating the plates, or the whole containing vessel. A thermometer bulb is inserted in the Receiver to this end.

7th. For comparative results, I propose to observe the effect of placing the electrotype during its deposition within a magnetic field, ^{both} weak and strong.

8th. I propose use for the negative electrodes fine crayons, or "leads", of pure foliated graphite.

9. Both chemical analysis and the Spectroscope must show that the refined graphite is perfectly pure,

and crystalline, being, by Brodie's test, entirely convertible into graphitic acid, and leaving no ash on combustion in oxygen gas.

(I) The native graphite is selected for its tenacity, flexibility and resistance to pulverizing. It is chemically purified, mechanically powdered, and ignited.

(II) It is then placed loosely in a steel cylinder or syringe, with an air tight plunger. The air being first well exhausted from the interstices, the graphite is condensed & welded into a solid, coherent mass, by applying severe pressure to the piston, according to Brodie's process. This mass may then be sawed into "leads" of any size.

(IV) Or without pulverization, selected leaves or foil of such graphite, after purification, may be compressed together, as plug tobaccos is made.

I do not confine myself, however, to any variety of natural or artificial graphite, or indeed to any kind of carbon, amorphous or crystallized, such as Passau graphite, Brodie's graphite, Priestley's semi-metallic carbon, &c. Excellent electrodes might be made from the debris, or film waste of previous operations, and furnish new films of exceptionally fine quality.

But I claim the general principle of making carbon films, by Prof Wright's plan, that is to say; Condensing on a cool plate, in vacuo, carbon vapor

volatilized by the disruptive discharge of static electricity, in the manner and under the conditions set forth.

At the same time, I propose to employ the best Ayrton foliated graphite, such as I sent you, in order that "like may produce like", and the artificial film possess, in the highest degree, those physical properties which distinguish its progenitor, but as it were, a new edition, revised and improved.

These films may be called "Static Films", as their origin is due to the deflagrating and percussive impulses of static or high tension electricity. The volume of current is comparatively feeble, the growth of the deposit slow, and elevation of temperature avoided.

We may also obtain "Dynamic Films", but the conditions which give birth to them are not so favorable to their quality, perhaps.

For such films we employ the voltaic arc, also in a hydrogen vacuum, although a vacuum is not essential. The upper pole consists of one, or more, pencils of foliated graphite, properly purified and agglomerated. The inferior pole consists of a stout plate of polished platinum, with a metallic backing. Through the latter - although this is not essential - there may circulate a current of water. Proper motion is given to the upper electrode so as to secure a uniform deposit of carbon upon the lower electrode.

Here the rate of deposit is accelerated, but the tension is low, the heat considerable, and the secondary gas ^{voltaic} dispensed with. By operating with an intense current, however, in a good hydrogen vacuum, and with small graphite poles, we might get good results. Such poles might be of the size of $\frac{1}{8}$ of an inch. The "Static Films", on glass backings, are, in my estimation, to be preferred.

Would you please furnish me information on the following points:

First. Suppose that the lifetime of one of your present standard lamps is reduced to an average period of 40 hours, what will the ^{mean} candle power be?

Second. At the aforesaid candle power, lasting 40 hours, what is the strength of the current consumed per hour, as measured by the copper voltmeter, the current consumed in your standard lamp of ~~mean~~ candle power and 600 hours lifetime, being reckoned, per hour also, as one?

Third. Have you introduced your Lamp yet at any of the gold quartz mines in California or elsewhere? I do not refer to silver workings.

Please acknowledge receipt.

Respectfully yours,

John A. Hinebrenner.

Write say our agent in
Johnson will be in my m 2
office + when you pass through
Chicago Ill. June 29th 83.

J. A. Edison Age of the field
my you can learn of the field
with the open mouth of the field
Dear Sir!
About three years ago I took the liberty
of writing to you from Christiania, Norway, offering
you my services as agent for your incandescent light
in the above mentioned country, and, in reply, receiv-
ed a letter from you, stating, that on account of
not having taken out the necessary patents in
Europe you were not able to give my proposal due
consideration. I have now been for about
a year in America, spending most of the time
in Chicago, and, as I intend to sail for Norway
in the fall in order to take charge of my father's
business I should like very much to enter
into business relations with you as above stated.

vis: as your sole agent for the Scandinavian
ries, Norway, Sweden & Denmark. I am familiar
with the principals of Electricity and I have al-
ways taken a great interest in the progresses of
same. I have seen your electric light on the
Exposition for Railroad appliances recently held
in Chicago as well as at your agency here and
at business houses where your light is in use
and my former interest has grown to admiration
and a strong desire has taken hold of me to intro-
duce your light in my own country, and I feel
convinced that I am able to handle same to
your entire satisfaction as well as to our mutual
benefit. The good name of my family to-
gether with my means will enable me to carry out
my purpose as above stated.

Hoping to hear from you, I am, dear Sir,
yours very truly
Oluf E. Neeraas,
% Jacob Holm, 245 W. Indiana Street, 3rd floor.



LIST OF
CENTRAL STATIONS AND ISOLATED PLANTS

FOR THE SUPPLY OF

The Edison
INCANDESCENT ELECTRIC LIGHT.

SUMMARY:

15 Central Stations,	- - -	31,500 Lamps
379 Isolated Plants, -	- - -	70,610 "
Total, -	-	<u>102,110</u> "

June, 1883.

THE EDISON ELECTRIC LIGHT CO.

CENTRAL STATIONS FOR THE SUPPLY OF THE EDISON ELECTRIC LIGHT.

New York City, 10,088 Lamps	Manchester, England, 1000 Lamps
Milan, Italy, 4,000 "	Rotterdam, Holland, 1000 "
Brooklyn, Mass., 4,000 "	St. Petersburg, Russia, 1000 "
Roselle, N. J., 1,800 "	London, England, 950 "
Boston, Pa., 1,600 "	Amsterdam, Holland, 900 "
San Diego, Cal., 1,500 "	Lawrence, Mass., 500 "
Dijon, France, 1,100 "	Banbury, Pa., 500 "
Full River, Mass., 100 Lamps	

LIST OF ISOLATED PLANT INSTALLATIONS.

UNITED STATES.

Breweries and Distilleries.

Best Brewing Co., Milwaukee, Wis., 700 Lamps
Mill Creek Distilling Co., Cincinnati, Ohio, 60 "
Ama, Max., New York City, 65 Lamps
Chicago Packing and Provision Co., Chicago, Ill., 30 "
Smyr & Bruner, New Haven, Conn., 30 "
Squires, J. P. & Co., Cambridge, Mass., 130 "
Thurber, H. K. & F. B. & Co., Worcester, N. J., 60 "

Cotton Mills.

Albion Cotton Mills, Elizaville, Md., 250 Lamps
Amory Manufacturing Co., Manchester, N. H., 250 "
Arlington Mills, Lawrence, Mass., 130 "
Bourne Mills, Fall River, Mass., 548 "
Comanac Mills, Fall River, Mass., 250 "
Grinnel Mills, New Bedford, Mass., 800 "
King Philip Mills, Fall River, Mass., 750 "
Lane Lake Mills, Fall River, Mass., 400 "
Lockwood Co., Waterville, Me., 250 "
Mount Vernon Co., Baltimore, Md., 400 "
McAdams, R. Y. & Co., Lowell, N. C., 100 "
Park Mount Cotton and Woolen Mills, Lenni, Pa., 60 "
Pemberton Mills, Lawrence, Mass., 375 "
Sibley Manufacturing Co., Augusta, Ga., 100 "
Slater Cotton Co., Pawtucket, R. I., 300 "
Wampanoag Mills, New Bedford, Mass., 750 "
York Manufacturing Co., Saco, Me., 750 "

Engineering Establishments, &c.

Avery, R. H. & C. M., (Agricultural Implementals), Peoria, Ill., 142 Lamps
Baldwin Locomotive Works, Philadelphia, Pa., 75 "
Carr & Hobson, (Agricultural Implements), Bergen Point, N. J., 150 "
Danforth Locomotive Works, Paterson, N. J., 50 "
Fairbanks, E. & T. N. & Co. (Scales), St. Johnsbury, Vt., 60 "
Lehigh Valley Railway Co., (Car Shops), Sayre, Pa., 120 "
Marketland Railway Co., (Car Shops), New York City, 120 "
McCormick Machine Co., Chicago, Ill., 130 "
Lawson & Fuller, (Car Shops), Chicago, Ill., 180 "
Nathan & Dreyfus, (Machine Shops), New York City, 125 "
National Tube Works, McKeesport, Pa., 65 "
Northey Iron Works, Duquesne, Pa., 100 "
Patterson Locomotive Works, Paterson, N. J., 60 "
Pettibone Iron Co., Puttstown, Pa., 250 "
Seymour, Solin & Co., (Car Shops), Stillwater, Minn., 250 "
Steen's Manufacturing Co., Erie, Pa., 150 "
Trenton, N. J., Trenton, N. J., 750 "
United States Rolling Stock Co., (Car Shops), Chicago, Ill., 120 "
United States Rolling Stock Co., (Car Shops), Urbana, Ohio, 125 "

Flour Mills.

Kerr's Flouring Mills, Milwaukee, Wis., 80 Lamps
Norton Bros. & Co., Chicago, Ill., 60 "
Rogers, H. J., Appleton, Wis., 300 "
Sanderson & Co., Chicago, Ill., 60 "
Star and Crescent Flouring Mills, Chicago, Ill., 60 "
Urban, Geo. & Co., Buffalo, N. Y., 70 "
Winona Mills, Winona, Minn., 70 "

Furniture Manufacturers.

Boston Chair Co., Ashburham, Mass., 150 Lamps
Haywood Bros. & Co., Gardner, Mass., 300 "

Mattewan Manufacturing Co., Mattewan, N. Y., 120 Lamps
Stetson, J. B. & Co., Philadelphia, Pa., 500 "

Hat Factories.

Mattewan Manufacturing Co., Mattewan, N. Y., 120 Lamps
Stetson, J. B. & Co., Philadelphia, Pa., 500 "

Hotels and Clubs.

Calumet Club, Chicago, Ill., 90 Lamps
Everett's Hotel, 102 Vesey Street, New York, 250 "
Green Island Hotel, Lake George, N. Y., 350 "
Hotel Everett, 400 Madison Street, New York, 150 "
Hotel Vendome, Boston, Mass., 63 "
Palmer House, Chicago, Ill., 84 "
Prospect House, Blue Mountain Lake, Adirondacks, 125 "
St. Charles Hotel, New Orleans, La., 150 "

Offices, &c.

American Express Co., Chicago, Ill., 250 Lamps
American Express Co., New York City, 250 "
Edison Electric Light Co., New York City, 65 "
First National Bank, Chicago, Ill., 150 "
Ladd G. S. (Edison Light Agency), San Francisco, Cal., 60 "
Merchant National Bank, Chicago, Ill., 73 "
National Life Insurance Building, Chicago, Ill., 125 "
Post Office, Watertown, N. Y., 250 "
Spencer, Trask & Co., (Hull), Albany, N. Y., 125 "
Western Edison Light Co., Chicago, Ill., 250 "
Whitire Building, Cleveland, Ohio, 400 "

Piano and Organ Manufacturers.

Beatty, Daniel F., Washington, N. J., 250 Lamps
Bridgeport Organ Co., Bridgeport, Conn., 500 "
Dolgo, Alfred, Delgroville, N. Y., 126 "
Krabbe, Wm. & Co., Baltimore, Md., 250 "

Paper Mills.

Albion Paper Co., Holyoke, Mass., 150 Lamps
Batavia Paper Co., Batavia, N. Y., 30 "
Porter Standard Co., Akron, Ohio, 150 "
Whiting & Campbell, New York City, 60 "
Whiting Paper Co., New York City, 120 "

Print Works.

American Printing and Dye Works, Fall River, Mass., 250 Lamps
Arnold Print Works, North Adams, Mass., 150 "
Marine Manufacturing Co., Lowell, Mass., 250 "

Printing and Publishing Establishments.

American Bank Note Co., New York City, 125 Lamps
Boston Daily Advertiser, Boston, Mass., 175 "
Boston Herald, Boston, Mass., 150 "
Baltimore Sun, Baltimore, Md., 150 "
Chicago Daily News, Chicago, Ill., 115 "
Davenport Gazette, Davenport, Iowa, 200 "
Hinds, Ketchum & Co., New York City, 100 "
Hooper, Wm. J. & Son, New York City, 500 "
New York Herald, New York City, 500 "
Ole, State Journal, Columbus, Mo., 100 "
Philadelphia Ledger, Philadelphia, Pa., 250 "
Philadelphia Record, Philadelphia, Pa., 150 "
Rand, McNally & Co., Chicago, Ill., 130 "
Record Room, (Govt. Printing Office), Washington, D. C., 125 "
Union Herald, Utica, N. Y., 60 "
Weed, Parsons & Co., Albany, N. Y., 450 "

Private Residences.

Chicago, Ill., 222 Lamps
Adams, J. W., " 115 "
Dent, Thos., " 76 "
Fairbanks, N. K., " 115 "
Jones, J. B., " 89 "
Keith, O. R., " 74 "
Kent, S. A., " 125 "
Minont Coal and Coke Co., (Residences and Offices), Minonk, Ill., 100 "
Molten, R. P., Chicago, Ill., 302 "
Morgan, J. Pierpont, New York City, 150 "
Seary, Joseph, Chicago, Ill., 97 "
Schwartz, C. D., " 70 "
Smith, H. D. (Residence and Factory), Appleton, Wis., 250 "
Smith, M. D., Chicago, Ill., 281 "
Trenton, N. J., Fort Washington, N. Y., 240 "

Public Buildings, &c.

Miller Industrial School, Batavia, Va., 400 Lamps
State House, (House of Representatives), Boston, Mass., 541 "
State Prison, Anamosa, Iowa, 228 "
University of Maryland, Columbia, Mo., 60 "
United States Military Academy, West Point, N. Y., 200 "
Young, Prof. C. A., (College), Princeton, N. J., 30 "

Rubber Factories.

Boston Rubber Shoe Co., Malden, Mass., 60 Lamps
The Mayall Rubber Co., Reading, Mass., 150 "

Saw Mills.

Boston, Peters & Co., Tullman, Mich., 60 Lamps
Taylor, O. N., Ludington, Mich., 25 "

New England Fish Co.	Winsted, Conn.	400 Lamps
Sennings, W. & Co.	Paterson, N. J.	60 "
Steamships, &c.		
S. S. "Albatross" (United States Fish Commission)	Washington	150 Lamps
S. S. "Albatross" (Oceanic S. S. Co.)	San Francisco, Cal.	210 "
S. S. "Columbia" (Baltimore Steam Packet Co.)	Portland, Oregon	120 "
S. S. "City of Worcester" (New York and Norwich Line)	New York	325 "
S. S. "Columbia" (Oregon Railway and Navigation Co.)	Portland, Oregon	120 "
S. S. "Kate Adams" (John S. Adams)	Pittsburg	120 "
S. S. "Mariposa" (Oceanic S. S. Co.)	San Francisco, Cal.	210 "
S. S. "Mariposa" (John S. Adams)	New York	120 "
S. S. "Pilgrim" (Fall River Line)	Fall River, Mass.	120 "
S. S. "Queen of Pacific" (Oregon Railway and Navigation Co.)	Portland, Oregon	150 "
S. S. "Virginia" (Baltimore Steam Packet Co.)	Baltimore, Md.	210 "
Stores.		
Aitken, Son & Co. (Dry Goods)	New York City	120 Lamps
Crocker, H. S. & Co.	New York City	180 "
Laffay, L. S. & Co.	Boston, Mass.	160 "
Jordan, Marshall & Co.	Chicago	65 "
Marshall Field & Co.	Detroit, Michigan	179 "
Metzall Bros. & Co.	Chicago, Ill.	310 "
Partridge, C. W. & E. & Co. (Dry Goods)	Williamsport, Pa.	60 "
Shaw, F. B.	New York City	330 "
Thurber, H. K. & F. B. (Wholesale Grocers)	Boston, Mass.	150 "
White, R. H. & Co. (Dry Goods)	Philadelphia, Pa.	250 "
Yates, A. C. & Co. (Clothing)		
Sugar Refineries.		
Bay State Sugar Refinery	Boston, Mass.	150 Lamps
Boston Sugar Refinery	East Boston, Mass.	125 "
Brooklyn Sugar Refinery	Brooklyn, L. I.	80 "
California Sugar Refinery	San Francisco, Cal.	150 "
Harrison, Havesney & Elder	Philadelphia	300 "
Havesney & Elder	Williamsburg, N. Y.	900 "
Mathieson & Weichers	Jersey City, N. J.	300 "
Tanneries.		
American Oak Leather Co.	Cincinnati, Ohio	150 Lamps
Shaw, F. & Bro.	Grand Lake Springs, Me.	80 "
Theatres.		
Academy of Music	Chicago, Ill.	150 Lamps
Bijou Theatre	Boston, Mass.	644 "
Ford's Opera House	Baltimore, Md.	310 "
Haverly's Theatre	Chicago, Ill.	642 "
Thread Works.		
Clark Thread Co.	Newark, N. J.	125 Lamps
Merrick Thread Co., No. 1 Mill	Holyoke, Mass.	98 "
" " " " " "	" " " "	350 "
Williammatic Linen Co.	Williammatic, Conn.	60 "
Worsted and Knitting Mills.		
Arlington Mills	Philadelphia, Pa.	500 Lamps
Clark & Keen	Hudson, N. Y.	160 "
Germania Mills	Newton, Mass.	500 "
Harrison, James	Olneyville, R. I.	150 "
Lorraine Woolen Co.	Lawrence, Mass.	130 Lamps
Old Kentucky Woolen Mills	Philadelphia, Pa.	200 "
Pink Mount Cotton and Woolen Co.	Holyoke, Mass.	70 "
Pascadeville Manufacturing Co.	Newburgh, N. Y.	126 "
Rittenhouse Manufacturing Co.	Farwick, R. I.	400 "
Sayles & Washburn	Louisville, Kentucky	350 "
Taylor, James	Lima, Pa.	250 "
Tinglo, House & Co.	Pensacola, R.	350 "
Wormbo Mills	Pasauk, N. J.	65 "
Woolen Mills.		
American Ship Building Co.'s Yards	Mechanicville, Conn.	120 "
Bergmann & Co. (Electrical Works)	Newburg, N. Y.	125 "
Chicago Exposition of Railway Appliances	Owensville, R. I.	150 "
Calahan, N. H. (Smelting Works)	Lawrence, Mass.	130 Lamps
Davis & Frost (Storage Batteries)	Philadelphia, Pa.	200 "
Eastman Dry Goods Co. (Photographic Materials)	Holyoke, Mass.	70 "
Erie Grain Elevator	Jersey City, N. J.	300 "
Fairbanks, N. K. & Co. (Lard Works)	St. Louis, Mo.	185 "
Fall River Bleaching	Fall River, Mass.	145 "
Fischer, R. & Co. (Spice Mills)	New York City	145 "
Ide, Bruce & Co. (Collar and Cutlery Factory)	Troy, N. Y.	150 "
Goff & Sons (Brind Works)	Farwick, R. I.	150 "
Light and Force Co. (Storage Batteries)	New York	15 "
N. Y. L. E. W. R. B. Elevator	Buffalo, N. Y.	130 "
Oregon Railway and Navigation Co. (Dock)	Portland, Oregon	150 "
Warren Chemical Works	Hunts Pt., L. I.	120 "

ARGENTINE REPUBLIC.

Factoria del Gas	Buenos Ayres	Lamps
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AUSTRALIA.

Cast Gumler	Melbourne	60 Lamps
Sydney Morning Herald	Sydney, New South Wales	60 "

AUSTRIA.

Sugar Refineries.

St. Genois, Comte	Cellectowits	120 Lamps
Schoeller	Cellectowits	17 "

Miscellaneous.

Brunn Theatre	Brunn	860 Lamps
Cie. Fires Life (Bridge Builders)	Nemitz	12 "
Kohn (Hill Factory)	Nemitz	80 "
Imperial Palace	Viena	500 "
Puckas, F. de	Vienna	285 "
Union Eau Gedeckhach (Restaurant)	Vienna	310 "

BELGIUM.

Thread Works.

De Smet & d' Hanis	Ghent	60 Lamps
Key (Aini) M.	Ghent	60 "
Simons, Iwan	Verviers	120 "
Société La Lys	Ghent	60 "

Miscellaneous.

Billard & Best (Fudge Works)	Antwerp	34 Lamps
Chamber of Deputies	Brussels	120 "
Charbonnage de Prestes (Coal Mines)	Antwerp	85 "
Gis, Segen & Co. (Sugar Refinery)	Antwerp	85 "
Godin, E. L. & Fils (Factory)	Huy	60 "
Musee du Nord (Museum)	Brussels	100 "
Park Theatre	Huy	500 "
Porta, N. & Co. (Smelting Works)	Huy	60 "
Société Anonyme Niel on Ruppel (Factory)	Antwerp	34 "

BRAZIL.

Dom Pedro R. R. Station	Rio de Janeiro	60 Lamps
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CANADA.

Canada Cotton Mills	Cornwall, Ont.	516 Lamps
Mill Printing Co's Building	Toronto	130 "
Montreal Cotton Co.	Valleyfield, Que.	800 "

CAPE OF GOOD HOPE.

House of Assembly	Capetown	60 Lamps
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CHILI.

Flour Mills.

Lanz, E.	Valparaiso	60 Lamps
Valdes Brothers	Buenos	60 "

Miscellaneous.

Consing, Senors (Residence)	Santiago	200 Lamps
Steamship Dock	Lota	60 "
San Cristobal Mill	Santiago	60 "
University of Chili	Santiago	15 "
Variety Theatre	Santiago	60 "
Vina del Mar (Hotel)	Valparaiso	60 "

CUBA.

Sugar Estates.

"Esperanza" (Don Felipe de Pelayo)	Cuba	75 Lamps
"Socorro" (Conde de Casa Yanes)	Stern Morena	65 "
"San Lino" (Montealba Bros.)	Cuba	113 "
"Constantine" (Messrs. Apetepin)	Cuba	84 "
"San Joaquin" (Conde de Casa Yanes)	Cuba	125 "

Theatres.

Albino Theatre	Havana	197 Lamps
El Louvre	Havana	70 "

Miscellaneous.

Diario de la Marina (Newspaper)	Havana	65 Lamps
Edison Spanish Colonial Light Co.	Havana	60 "

ENGLAND.

Engineering Establishments.

Mather & Platt	Salford	1000 Lamps
Roby & Co.	Lincoln	150 "
Harrison Patent Steam Steering Co.	Salford	70 "

Private Residences.

Coxes, Archibald	Woodside, Paisley, N. B.	130 Lamps
"Gordon, Colonel	Little Menlo, Upper Norwood, Surrey ..	30 "
Smith, T. Taylor	Bush Hill Park, Enfield, Middlesex ..	35 "

Public Buildings.

City & Guilds, of London Technical College ..	Finsbury, London	200 Lamps
House of Commons (Dining-room and Library) ..	Westminster	150 "
Royal Institution, (Picture Gallery) ..	Manchester	50 "
"Society of Arts	London	50 "

Steamships.

S. S. "Apollo" (Compagnie La Platonie)	180 Lamps
S. S. "Clen McArthur" (Clen Line)	150 "
H. M. Troopship "Malahat"	150 "
S. S. "Minerva" (Compagnie La Platonie)	375 "
S. S. "Oregon" (Gutun Line)	180 "
S. S. "Parema" (Tasmanian Steam Navigation Co.) ..	150 "
S. S. "Rio Parana" (Brazilian S. S. Co.) ..	65 "
S. S. "Rio Parana"	150 "
S. S. "Takapuna" (Union S. S. Co. of New Zealand) ..	65 "
S. S. "Taranaki"	150 "
S. S. "Wahine"	150 "

Miscellaneous.

Consolidated Telephone Co.	London	120 Lamps
Edison Electric Light Co. (Offices) ..	Manchester	100 "
Gottschalk & Co.	London	1000 "
Holborn Restaurant	London	1000 "
Howarth, Geo. (Master)	London	120 "
London, Brighton and South Coast Railway Pullman Express Trains and Passenger Steamers ..	London	120 "
London and South Western Railway Station ..	Manchester	100 "
Manchester Guardian	Manchester	120 "
Mosley, D. & Sons, (Rubber Manufacturers) ..	London	1000 "
Pullman Bros. (Wire Manufacturers) ..	Homerton, London	130 "
Theatre Royal	Manchester	1000 "
"Travellers' Club	Manchester	130 "
Wright, Turner & Son, (Spinners) ..	Cinderford, Gloucestershire ..	60 "
Verity, H. & Sons, (Electric Light Fixtures) ..	Salford	900 "
	London	65 "

*Edison Lamps used in connection with other Dynamos.

Edison Lamps used in connection with Fuses Accumulators.

FRANCE.

Dye Works.

Honnert, Freres	Warguehal	80 Lamps
Motte & Mailhasson	Rochelle	80 "

Hotels, &c.

Chaveau, M. (Cafe)	Toulouse	80 Lamps
Hotel Continental	Paris	60 "

Paper Mills.

Bardon, J. & Fils	Perpignan	60 Lamps
Sireu, B.	Toulouse	17 "

Powder Mill.

Poudrière de St. Chamas	St. Chamas	60 "
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Printers and Publishers.

Hachette & Cie.	Paris	60 Lamps
Lahure, A.	Paris	60 "

Stores.

Belle Jardiniere	Paris	60 Lamps
Dandricolle Fils & Gaudin	Bordeaux	60 Lamps
Gérard	Narbonne	17 "
Magasin du Bon Marché	Paris	250 "
Magasin du Louvre	Paris	60 "
Sabotier, Ch.	Mosmet	60 "

Thread Works.

Bain, Ph.	Condé-sur-Noireau	73 Lamps
Leleuvre, Ed.	Pont Anthoin	60 "
Leleuvre, L.	Rochelle	60 "
Lange & Cie.	Louviers	80 "
Loré, R. & Cie.	Blainville (Meurthe et Moselle) ..	210 "

Miscellaneous.

Bureau de France	Paris	93 Lamps
Cieper, M. (Canned Foodstuffs) ..	Vesoul	60 "
Collard, Ch. (Weaving) ..	St. Chateau	120 "
Chemin de fer de l'Oront, (R. R. Station) ..	Paris	221 "
Edison Machine and Lamp Factory ..	Irry	400 "
Exposition de Bordeaux	Bordeaux	400 "
Fal Pères, (Pottery)	Pexonne	80 "
Lamache, A. Joubert & Matassa, (Machine Works) ..	Angoulême	400 Lamps
Lodé Fils, (Feathers)	Nancy	80 "
Luis, J. (Tannery)	Paris	80 "
Municipal Council of Paris, (Offices) ..	Paris	74 "
Wucher, H. (Glass Works) ..	Paris	74 "
Schmidt, P. & Fils (Pottery) ..	St. Die	140 "

GERMANY.

Clubs, Hotels, &c.

Resource Club	Berlin	60 Lamps
Union Club	"	225 "
Vogel, Wm. (Restaurant) ..	Munich	84 "

Printing and Publishing Offices.

Buxenstein, Wm.	Berlin	60 Lamps
Colleger, Gustav	Passau	120 "

Private Residences.

Andres, Geo.	Kreunmuh	17 Lamps
Maier Loewi & Bro.	Passau	21 "

Public Buildings.

Munich Exposition	Munich	800 Lamps
Post Office and Depot	Stuttgart	1000 "

Theatres.

Hof Theatre	Dresden	60 Lamps
Königs Residenz Theatre ..	Munich	500 "

Miscellaneous.

Albace Lorraine, R. R. Station ..	Strasbourg	1900 Lamps
Ascherberg, Emil, (Piano Factory) ..	Dresden	250 "
Bohmische Bräunerei, (Brewery) ..	Berlin	120 "
Durkopp & Co., (Machine Shop) ..	Siebold	20 "
Electric Light Agency	Cologne	154 "
Fischer & Seip, (Thread Works) ..	Pommern	120 "
Fuss & Crotzger, (Saw Mill) ..	Rostock	34 "
Gosny Bros	Hamburg	60 "
Imperial Navy Yard	Darm	200 "
Lindauer, S. & Co., (Corset Manufacturer) ..	Cassatt	130 "
Mosching, M.	Frankfurt	120 "
Neiddeutsche Raffinerie, (Sugar Refinery) ..	Hamburg	60 "
Porcelain Manufacturing Co.	Sarrequeim, Lorraine ..	60 "
Roschke & Buchkeid	Itzeh	17 "
Rosenfeld, N. & Co., (Lindoleum Factory) ..	Cospien	17 "
Scharf & Hauschen, (Furniture) ..	Crefeld	24 "
Schneider, W. & Co., (Weaving) ..	Ahlen	60 "
Société Strontianit, (Mine)	Elberfeld	120 "
Van der Heydt	Berlin	250 "
Wilhelmstrasse, (Street Lighting) ..		

HOLLAND.

Kraszupolsky, A. W., (Café) ..	Amsterdam	70 Lamps
Reynau, V., (Flour Mill)	"	25 "
Wester Suikermaffnary, (Sugar Refinery) ..	"	350 "

ITALY.

Cotton Mills.

Crespi, Benigno	Vaprio	60 Lamps
Crespi & Co.	Bergamo	120 "
Crespi, G. & Co.	Vigevano	104 "
Croati, A. M.	Lago Maggiore	26 "
Lemari & Co.	Turin	120 "
Visini, Giacomo	Pisa	24 "
Ponti A.	Salbate Rusio	120 "

Miscellaneous.

Cannello, — (in Pietro)	Pegli	53 Lamps
Cavallieri & Franco	Bologna	20 "
School of Art	Rome	60 "

RUSSIA.

Mills.

Afenski & Co.	Tagnogr	80 Lamps
Invascul & Co.	Invascul, Finland	17 "
Johnson, M., (Saw Mill) ..	Yensky	15 "

Paper Mills.

Ingersoll Paper Co.	Ingersoll, Finland	60 Lamps
Rieck, M.	Helsingfors	60 "

Thread Works.

Hutcheson & Co.	Moscow	310 Lamps
Finlayson & Co.	Tammerfors, Finland ..	650 "

Miscellaneous.

Dembitzky & Co., (Bag Factory) ..	Okonowski	120 Lamps
Kaukas & Mercere Co., (S. S. "Marshall Souvarov") ..	On the River Volga ..	80 "
Konik Kieff, (R. R. Station) ..	Konotop	60 "
Lentovsky, N., (Theatre) ..	Nijni Novgorod	120 "
Nobel, M., (Forge Works) ..	Helsingfors	120 "
Tenaci, M., (Sugar Refinery) ..	Yensky	140 "

SPAIN.

Lahrador, M., (Machine Works) ..	Madrid	60 Lamps
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List of Contact
Station &
Jared's Plant
for the Company
of the Edison
Electric Co.

PARTIAL LIST OF PLANTS ENLARGED AFTER TRIAL.

		First Installation 15 Lamps,	Increased to	60 Lamps
Ams, Max.	New York City,	" 100 "	" "	1200 "
Alsace Lorraine Railway Station	Strasburg, Germany,	" 150 "	" "	250 "
Baltimore Son	Baltimore, Md.,	" 60 "	" "	150 "
Danforth Locomotive Works	Paterson, N. J.,	" 120 "	" "	200 "
Chemin de fer de l'Ouest	Paris, France,	" 120 " of 8 c. p.	" "	150 " of 16 c. p.
Davenport Gazette Co.	Davenport, Iowa,	" 15 "	" "	60 "
Eastman Dry Plate Co.	Rochester, N. Y.,	" 300 "	" "	650 "
Finlayson & Co.	Tammerfors, Finland,	" 250 "	" "	500 "
Firs, Banes & Erben	Philadelphia, Pa.,	" 75 "	" "	210 "
Loefel & Co.	Blainville, France,	" 120 "	" "	200 "
London & S. W. Railway	Waterloo, London,	" 120 "	" "	400 "
Merrick Thread Co.	Holyoke, Mass.,	" 250 " of 8 c. p.	" "	250 " of 16 c. p.
Merrimac Manufacturing Co.	Lowell, Mass.,	" 15 "	" "	60 "
Norton Bros. & Co.	Chicago, Ill.,	" 250 "	" "	350 "
Old Kentucky Woolen Mills	Louisville, Ky.,	" 125 " of 8 c. p.	" "	300 " of 16 c. p.
Pacifico, Cavaliere	Bologna, Italy,	" 120 "	" "	300 "
Pemberton Co.	Lawrence, Mass.,	" 250 "	" "	500 "
Sales & Washburn	Mechanicsville, Conn.,	" 120 "	" "	300 "
Seymour, Sabin & Co.	Sillwater, Minn.,	" 120 "	" "	500 "
Stetson, G. B. & Co.	Philadelphia, Pa.,	" 60 "	" "	250 "
Thurber, H. K. & F. B. & Co.	New York City,	" 15 "	" "	60 "
Urban, G. & Co.	Buffalo, N. Y.,	" 60 "	" "	750 "
Wamsutta Mills	New Bedford, Mass.,	" 120 "	" "	600 "
Weed, Parson & Co.	Albany, N. Y.,	" 500 "	" "	750 "
White, R. H. & Co.	Boston, Mass.,	" 150 "	" "	500 "
Worumba Manufacturing Co.	Lisbon Falls, Me.,			

J. E. BROWNE & CO.
(62 BROADWAY, Room 12)
BROKERS IN ELECTRICAL STOCKS, BONDS, PATENTS, AND
SUPPLIES OF EVERY DESCRIPTION.
Correspondence solicited and Electrical Information
furnished.

1883-07-06

Do you mean
lamps black out
not broken
will
July 6 1883
A. Edison
Sir broken do

How many dollars
+ Cents lawful money of the U.S.
(No Trade dollars rec^d) are you
willing to give me, if I succeed
in preventing the blackening of
your Incandescent Lamps, during
the lifetime of said lamps.

I think that I have a scheme
that will do it.

If you are willing to have
me try please send me three
of the blackest that you have
on hand. The worst that can
happen will be the loss of said
lamps for I shall never return
them to you

Yours
James E. Browne
Please Ans by return mail

1883-07-10

I am so busy organizing several stations
in different parts of the county that
I have been ~~unable~~ ^{unable} to close ~~the~~ ^{the} ~~matter~~ ^{matter} ~~up~~ ^{up} ~~before~~ ^{before} ~~the~~ ^{the} ~~10th~~ ^{10th} ~~of~~ ^{of} ~~July~~ ^{July} ~~1883~~ ¹⁸⁸³
for few weeks. Mount Joy, Lancaster Co., Pa.
the matter up before July 10, 1883.

Thomas A. Edison Esq.,

65 Fifth Avenue, New York City.

Sir:

Your note of June 18th was
duly received, but, since that date, I
have not heard from you, either as to
the subject matter of my letter of
June 6th, or my last letter of June 22^d,
in which I explained a method of
making artificial films, and concluded
with certain interrogatories.

I should be pleased to learn what
has been the extent and outcome, so far,
of your investigations; and what is the
outlook, from the indications already
afforded. The subject is not yet exhausted
with me. Awaiting a reply, I remain,

Yours respectfully,

John A. Winnebrenner

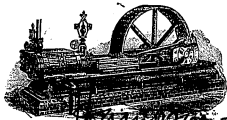
38 N.Y. July 14/83

Yours rec^d

Please send me
three blacken^d &
lamps with
perfect Carbons

Yours &
Jas E Browne

1883-07-19



EDWARD P. HAMPSON & CO.
Steam Engines and Boilers,

Wood and Iron Working Machinery,

SAW MILLS,

Grain Mills, Hoisting Engines, Etc.,

36 Cortlandt Street,

EDWARD P. HAMPSON,
WILLIAM F. HARKIN,

Our man has seen the
New York, July 19 1883
Engine & don't like it

C. J. Clark Esq
65-5th ave N.Y.

Dear Sir - Will you
do us the favor to "step in"
at your convenience and
examine our new Electric
Light-Engine -

We have made
radical changes in Governor
Valve.

Yours Very Truly
E. P. Hampson Recd

Have seen the engine but cannot
now recommend it.

C. J. Clark



EDWARD P. HAMPSON,
WILLIAM F. HARRIS.

1883-07-19

EDWARD P. HAMPSON & CO.
Steam Engines and Boilers,

Wood and Iron Working Machinery,

SAW MILLS,

Grain Mills, Hoisting Engines, Etc.,

36 Cortlandt Street,

New York, July 19 1883

Samuel Russell Esq
65- 5th Ave
N.Y.

Dear Sir - Will you
do us the favor to stop in and
look at our new Electric Light
Engine -

We have made radical
changes in Governor & Valve -

Mrs. Drury,
E. P. Hampson & Co.

Cable Address
"OSCAROTTO"

OSCAR O. FRIEDLANDER,
137 DUANE ST.

NEW YORK

1883

1883-07-23

Don't Believe in
Storage battery

Mr. Cairn

so far will send you no ha.
and covered some ground, I will

undoubtedly be thoroughly tested at
the Vienna Exposition. I will
tell you the results & could tell what

Presuming that you take a deep interest in
all matters concerning electricity I beg to
inform you that my brother Mr. Joseph Friedlander
of Vienna has very successfully attached a
storage battery to a running engine in Vienna & that he
is exhibiting one of Halladay's windmills of 24"
at the electric exhibition to be held there next
month to drive an electric battery. He is
of the opinion that windmills in connection
with storage batteries are going to be a very
important fact in electricity on account of their
great savings as there are no expenses attached
excepting the first outlay - no engines, coal
no danger of explosion, no noise, etc.

Would you determine to get a windmill (genuine)
I will furnish you with pamphlets & estimates
my brother ordered a No. 1 mill equal to 18 horsepower
that would do the same purpose - I will of course
allow you the trade discount - Trusting that you
will give this matter due attention

I remain very respectfully,
Dear Sir,
Oscar O. Friedlander

Translation

D 12 22
1883 El. H.

St. Dié, Vosges, France
July 26/83.

Mr. W. M. A. Anderson.
Board of Fire Underwriters
New York

Being the owner of 2 Edison dynamos ^{the same as} mentioned
in your pamphlet, written by Mr. Henry Morton in
1882, and having been informed that the A and
B Edison incandescent lamps are sold in New
York at very low price, although of equally
long life as those furnished in France by the
Société Edison itself, I desire, dear Sir, to get
the address of the manufacturer to whom I could
apply for a quantity of them.

For this purpose I took the liberty to apply to
you, having no other New York address, than ~~the~~
yours printed on the pamphlet.

I would thank you sincerely for the address
desired and have the honor to be, etc

Paul Schmitt. fils

RECEIVED

AUG 11 1883

RECORDED

FILE NO. 153...

THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

NEW YORK, _____ 188

Mr. Hooker

Please translate

return

Insull
J

MAISON
DE
BONNETERIE



PAUL SCHMITT FILS

USINE DE BONNETERIE A VOSGES

ST DIE (VOSGES)

SAALES (ALSACE)

St. Die le 26 juillet 1883

Monsieur W. M. M. Harrison
Rue de Fair Viewmonts New York

J'ai pour vous deux machines électriques dynamo-
Electric, système dont je vous envoie, ouvrage de M.
Gunn Nelson 1881, tout nouveau, et contenant tout ce
que l'on trouve. Me P. a mis en service, pour cet ouvrage
(système Edison) le rendant à New York à son plus avantage
pour son maître, pour en avoir une autre, je vous
donne que cette machine en France par le Saint-Etienne
même, je vous envoie M. M. de l'usine (système
du fabricant, à qui je fournis en outre, pour
est obtenu une certaine quantité.

C'est ainsi cette intention que je me permet de vous
l'avoir reçue à votre bonne connaissance, et vous envoie
autre adresse à New York que la même entreprise
Sew & Wrothman, et c'est dans l'espoir que vous
verrez bien si l'on ne s'en aperçoit, et si vous
à New York pour lequel je vous envoie les deux
que je vous envoie M. M. de l'usine (système
du fabricant, à qui je fournis en outre, pour
est obtenu une certaine quantité.

Que je vous envoie M. M. de l'usine (système
du fabricant, à qui je fournis en outre, pour
est obtenu une certaine quantité.

P. Schmitt fils

FILE NO. 43

RECEIVED
AUG 11 1883
ANSWERED

THOMAS A. EDISON
No. 65 FIFTH AVENUE

48
 If Mr. Edmund July 26th 1833
 Recd. Mr. E. ~~Smith~~ Schmitt's
 Mr. Edwards for his
 Johnston for buy lamp
 for France

883-0731
Mr Edison 7/31/83

Mr W. L. Howell tells me
this PM that he learns from
very good authority that

Wetson is at work day & ^{from}
night on one hundred candle
incandescent lamps for use on
the Bridge. Can you ascertain
if there is any truth in this -

I would like to use it with the
Bridge trustees & Chief Eng
Martin -

Reply

B. F. Card

1883-08-16 17

ENGINES, BOILERS

-AND-

MILL FURNISHING
GOODS,

PLUMBERS, GAS, AND STEAM FITTERS' SUPPLIES.

WILSON & ROGERS,

316 and 318 Robert Street.

St. Paul, Minn. Aug 16th 1883.RECEIVED
AUG 20 1883
ANSWERED.....135...
FILE NO.....

Steam Pumps,
Injectors,
Inspirators,
Steam Gauges,
Cent Dogs,
Saws, Files,
Emery Wheels,
Rope,
Lath Yarn,
Shingle Bands,
Pulley Blocks,
Lubricating Oils,
Board and Log Rules,
Axes,
Rubber and
Leather Belting,
Hose and Packing,
Wood Pumps,
Iron, Cistern, Well
and Force Pumps,
Gas and Steam
Pipe and Fittings,
Gas Fixtures,
Lead Pipe,
Bath Tubs,
Boilers,
Etc., Etc.

Pho. A. Edison
Dear Sir,

I enclose some papers which explain themselves, and will show you what the U.S. Company are doing here. Any thing you can give me to spoil the statements made will be gladly received. Please keep these papers as I may be called upon for them. Hope to send you something about prices of land in a few days.

Yours truly
Thos. P. Wilson

Established 1866.

DUDLEY NEWTON, ARCHITECT,

BELLEVUE AVENUE NEAR KAY STREET.

NEWPORT, R. I.

RECEIVED

AUG 21 1883

ANSWERED

Aug 21/83 3

FILE NO.....

Mrs. A. Edison -

Edison Electric Light Co. - New York.

Dear Sir - I am building a house in Newport for Mr. B. Webb, Esq. of Boston - which is one of the finest here :- he is anxious to have wires run for future electric lighting. The lathing throughout the house is to be of iron wire lathing.

If I send you a copy of the plans can you give me an estimate for doing the work - if done it should be done within ten days as we are nearly ready for lathing. Of course the wires must be so placed as to avoid all possible danger of fire.

Yours truly

Dudley Newton -
Arch't.

Wrote him to
send plans

D 1883 22. 9th
We have made third lamps
but prefer bamboo 9 Normanby Str.
The double wound dy. ^{hatched on type}
wgs used by me 2 1/2 years ago 21/8/83.
Sir, my patent is about 4 years old.
Some eighteen months ago you
We don't regard it as, it is, better
invented the system of double
winding of dynamo which gives
uniform E.M.F. with varying resist-
ance. I thought it was not
patentable but as Brown & Co.
and Menages in Germany have
patented it lately, I propose to
take out a patent in America
as the two years allowed are
not yet run out. This winding
is already largely used for in-

caudescant lighting; and if you think it worth your while I beg you will make an offer for the assignment of my patent to you.

I would also ask whether my experience in lamp manufacture &c would be useful to you. I need hardly say that I am well up in the subject. I could, for instance, come to New York for a month or two or more permanently, but think a

short time will most likely be suitable, as you may not care to let me into secrets of your own manufacture. I could probably make carbon from thread which wd be much more easily dealt with than bamboo slips. Lamps made with such carbon could not be used in England, but as the English Edison & Swan interest are now combined I am free to do anything I like in

America, as I am in no
way bound to the American
Boan Co.

I am
Yours faithfully
Jas. Swinburne

Lakeport. Swan factory Paris
Boston

Received
1085
1883
Jas. Swinburne
Wm. C. Swan
FF

Esq. no. 10.

N. Y. Aug 20-

Friend Johnson. Have you heard
of a reported improvement dynamo
made by one W. Linnis - (used be
an opr. here) - who is now negotiating
with Rufus Hatch to introduce
it and who is said to be
organizing a stock company
for that purpose. ~~now~~ Claims a
savings to 75% I can't get any
particulars at present. Your
answer recd all right. If
you want my stock for voting and
work. I don't suppose ~~the~~ ^{little} there
is will be of any use to your hope
to see you some evening in near
future. Truly W. Gregory

1883-09-27

COPY.

2, Wall Street,

Sept. 29th. 1883.

My Dear Sir:-

I wish to make you acquainted with Mr. Edison, the inventor, my client and my friend.

He wishes to speak with you about supplying light to Harts or Wards Island, or both, on terms good for the City, and improving present conditions.

My acquaintance with Mr. Edison, now of some long standing and with the Edison Electric Light Company warrants the assurance that you may rely upon their statements, and on their performance of whatever they agree.

I am sure of the courtesy with which you will receive Mr. E., and whatever you find you can justly do to promote his wish, will be deemed a kindness to me.

Sincerely yours,

(Signed)

Roscoe Conkling.

The Honorable

Jacob Hess,

etc. etc.

good
*please write Conkling
thanking him for
letter & will sign it*

Large thing
underground

1883-10-11

Chittenden, Townsend & Chittenden,
Lawyers.

D. P. Chittenden,
W. H. Chittenden,
James H. Townsend, Jr.

160 Broadway,

New York: 11 th Octo 1883.

T. A. EDISON ESQ.
City.

DEAR SIR,

The cases to compel the Electric Light Companies to place their wires underground will soon come on for trial. Your thorough knowledge of the whole subject of electricity enables you to give to the Court more reliable information, than any other Telegraphic Expert. I very much desire to examine you in one of these cases upon the practicability of laying electrical conductors below the surface of the ground upon the practical operation of your system in the lower part of the City and also upon the probable result of attempts at the storage of electric energy in the form of low pressure gas. I desire to make the necessary arrangements for this purpose and I am sure that you will be able to do so. If there is any reason why you should not desire to testify upon these points, please inform me. Your great success in electrical invention and your reputation in this country and in Europe makes it almost necessary that I should call you as a witness, more especially as I desire to produce the best evidence which can be procured.

YOURS TRULY.

S. Chittenden

1883-11-7

The Electric, Manufacturing, and Miscellaneous Stock Exchange,

Of New York, (LIMITED)

Organized for the purpose of affording a market for all classes of VALUABLE Securities, not listed on the New York Stock Exchange.

DUNCAN BUILDING,

Corner Nassau and Pine Streets,

Dear Sir,

The within prospectus presents an outline of the field which this Exchange will occupy. The public opening takes place December 8, 1883.

Inquiries for registration are being made by Incorporated Companies from every section of the country, and the belief is warranted that the amount of daily transactions in good securities will ultimately be surpassed only by the New York Stock Exchange.

As may be seen by the list of committees appointed, the management is under control of substantial business men.

Application blanks for listing of Companies and for memberships are herewith attached. A careful perusal of the accompanying Prospectus is respectfully invited.

Albert A. Jacobus
Secretary.

New York, November, 1883.

LIST OF OFFICERS OF THE **Electric, Manufacturing, and Miscellaneous Stock Exchange,** **of New York, (Limited),**

Organized for the purpose of affording a market for all classes of VALUABLE Securities, not listed on the New York Stock Exchange.

President.
 Gen. M. HARR, President Chelsea National Bank, No. 196 Broadway.
1st Vice-President.
 CHAS. HEYENSGORFF, No. 66 Nassau Street. *2nd Vice-President.*
 NATH. P. LAMSON, No. 125 Fifth Avenue.

Treasurer.
 ARTHUR B. GRAVES, President St. Nicholas Bank, No. 7 Wall Street.
Secretary.
 ALBERT H. JOCKLEY.

Chairman and Assistant.

Financial Committee.
 Gen. M. HARR, Chairman.
 NATH. P. LAMSON.
 M. FRED. CHRISTENSEN.

Regulation Committee.
 CHAS. HEYENSGORFF, Chairman.
 NATH. P. LAMSON.
 WM. LAURENT BAILEY.
 EDG. SMITH.
 ALBERT H. JOCKLEY.

Less Committee.
 ARTHUR B. GRAVES, Chairman.
 ALBERT H. JOCKLEY.
 THOMAS BARCLAY.

STANDING COMMITTEES.

Security Committee.
 GEORGE I. HUTCHINGS.....Cashier, Third National Bank, No. 30 Nassau Street.
 KIMBLE E. CLAFF.....Banker, No. 45 Broadway.
 THOMAS C. POLLOCK.....Cashier, St. Nicholas Bank of New York, No. 7 Wall Street.
 T. P. FORTNEY.....Cashier, Chelsea National Bank, No. 196 Broadway.
 ED. HENNINGSTADT.....Banker and Broker, Nassau Street.
 OTTO WERNER.....Lager & Billing, Bankers, No. 7 Wall Street.
 EDWARD W. WILSON.....Electrical Engineer, No. 7 Wall Street.
 GEO. H. FINE.....Groceries & Felt, Bankers, No. 15 Broadway.

Electric and Manufacturing Committee.
 STEPHEN D. FIELD.....Electrician, No. 14 Broadway.
 RUFUS C. VANDERBILT.....Site Railroad, No. 21 Cortlandt Street.
 R. A. C. SMITH.....Hudson Gas Company, No. 49 Wall Street.
 JOHN A. BELLEVILLE.....Standard Gas Company (Limited), Anne House.
 W. H. H. BROWN.....Mechanical Engineer, Mills Building.
 J. M. FANNING.....Vice-President Brooklyn Gas Company, No. 9 Wall Street.
 CHARLES DUNTON.....Treasurer, Electric Railway of United States.
 F. C. OPPENHEIM.....Mechanical Engineer and Contractor, No. 37 Thomas Street.
 H. M. CARLTON.....Broker, No. 17 East 17th Street.
 THOM. H. DELANE.....Broker, No. 93 Park Row.

Admission Committee.
 DEMETRIUS N. BOYARIS.....Clock Maker, No. 30 Pearl Street.
 Wm. TOUGS.....Miscellaneous Stock Broker, No. 41 Exchange Place.
 JOHN B. SCOTT.....Commercial Foreign Company, No. 120 Broadway.
 FREDERICK JACOBET.....J. H. Davis & Co., No. 38 Pine Street.
 J. H. F. MAY.....Merchant, 28 Broad Street.
 F. M. LAMSON.....17 Cedar Street.
 Wm. W. WHITNEY.....15 Broadway.
 LAMON BROS.....Broker, No. 14 Moore Street.

Arbitration Committee.
 HEN. HIRSH A. JOHNSON.....No. 54 William Street.
 HENRY B. KIMBALL.....Pacific Iron Works, No. 35 Broadway.
 A. J. BAYLOR.....Stock Broker, Mills Building.
 R. H. CLARK, Esq.....Attorney-at-Law, No. 120 Broadway.
 Wm. H. DAVIS.....Attorney, No. 7 Jackson Street.
 JAMES MCNEIL.....Merchant, No. 125 Water Street.
 W. P. BARTLETT.....Broker, No. 41 Wall Street.
 EDWARD S. BURGESS.....W. P. Hamilton & Co. Brokers, No. 9 Nassau Street.
 ISIDOR KAMEN.....Broker, No. 120 East 12th Street.
 WILLIAM H. AUSTIN.....Wm. Ains & Son, Merchants, Nos. 2 & 10 Water Street.

Audit Committee.
 J. J. GARDNER.....St. Nicholas Bank, No. 7 Wall Street.
 GEO. COPELAND.....Broker, No. 121 Pearl Street.
 A. H. CROSBY.....Brooklyn, No. 111 Broadway.
 JON. C. WELCH.....Publisher, No. 18 Beaver Street.
 J. H. FANLEY.....Ferry & Co., Commission Merchants, No. 125 Pearl Street.
 H. C. JACKSON.....Broker, No. 84 Wall Street.

Consolidation Committee.
 HEN. A. P. K. SAPPERS.....No. 115 Broadway.
 JAMES WALSH.....J. Walsh & Co., No. 9 Wall Street.
 A. E. HOLT.....C. H. Hoy & Co., No. 8 & 9 Broad Street.
 W. L. BRIDGEMAN.....Columbia Iron Works, No. 120 Nassau Street.
 CHAS. D. GRISMAN.....Merchant, No. 12 Wall Street.

Arbitration Committee.
 F. J. MYTHES.....Consolidator, No. 49 Wall Street.
 H. G. ELLIOTT.....Brooklyn, New York.
 W. P. GROVERMAN.....Investment & P.M. Bankers, No. 75 Broadway.
 E. DUNHAM.....C. R. & R. B. Livermore, Merchants, No. 125 Broad Street.
 GEO. D. PETERSON.....Manager & Broker, Merchants, No. 95 State Street.
 C. VANDERBILT.....Broker, No. 4 South Street.
 E. S. PACE.....Furnishings & Suffolk Co. Bank.
 ALFRED S. MILLER.....First National Bank of Brooklyn.
 SHILOH COLLIER.....Collins, Basile & Jenkins, No. 25 Pine Street.

Creditor Committee.
 ALFRED CHURCHMAN.....Broker, No. 17 Moore Street.
 C. S. SWANEY.....Broker, No. 9 Nassau Street.

Gravely Committee.
 JAMES H. BLAVETT.....Manager, Mutual Union Life Insurance Co., No. 121 Broadway.
 BENJAM. B. LAMONT.....Union, Merchants & Co. Brokers, No. 25 Broadway.
 JAMES S. TAYLOR.....Franklin House & Co., Merchants, Nos. 17 & 19 Bridge Street.

Inspectors of Elections.
 D. B. DAYTON.....Agent, Nevada Bank of San Francisco.
 JOHN A. BELLEVILLE.....Shelton Gas Company.
 F. L. KICHING.....Miscellaneous Bank.

General.
 Messrs. LEROW & HALLMAN, No. 46 Exchange Place.

Bank.
 ST. NICHOLAS BANK OF NEW YORK. CHATHAM NATIONAL BANK. THIRD NATIONAL BANK.
Marginal Depositaries.
 UNION TRUST COMPANY. PRODUCE EXCHANGE BANK.

PROSPECTUS OF

The Electric, Manufacturing and Miscellaneous Stock Exchange,

The amount of *Cash Capital* invested in Electric, Manufacturing and "Miscellaneous" Companies exceeds that invested in Railroads, and the securities of these incorporations have become so important in the *financial world* that they require a representative market of their own.

Stocks and Bonds of Insurance, Bank, Gas, Horse Car, Sewing Machines, Land and sundry Commercial Companies (but *nominally* represented), have an *actual* value ranging in hundreds of millions of dollars.

The *Electric* interest, now one of the most important in the world, having its investments in Telegraph, Telephone, Electric Light, Signal, Electric Railway, Electric Manufacturing and other Industrial applications of Electricity, are already enormous.

The great *Manufacturing* interest of this country, represented by Cotton, Wool, Grist, Leather, Iron, and hundreds of thousands of *Producing* stock companies, alone, exceeds that of the Railroads.

In the absence of a representative Exchange, dealings in these securities are greatly restricted and retarded by private brokers, to the inconvenience of patrons, and, from the want of a competitive market, prices have been only nominal.

Hence the necessity of an Exchange which shall afford a market for all classes of valuable securities not listed upon the New York Stock Exchange.

Therefore this Exchange has been duly incorporated and established upon a substantial basis. Good stocks may be listed, called daily, a market value fixed and transactions recorded, with the same facilities and advantages as those upon the New York Stock Exchange, and governed by the same rules.

Members of the New York Stock Exchange, have access to the floor of this Board and dealings upon payment of a registry fee.

A new and important feature is to be introduced in this Exchange, viz.: *A Daily Auction Sale* of all classes of securities. This will be of great value to companies and a convenience to bankers, brokers and the public, who are desirous of disposing of securities at public sale. The sale is to take place in the middle of the day, during which time the Board is adjourned and the room thrown open to the public and an Open Public Exchange created. Securities will then be disposed of as at the present auction rooms. Great advantage is afforded by advertising in official report of the Exchange without charge, and more general publicity and security.

A Gratiuity or Insurance Fund is to be established for the benefit of members, similar to that of other Exchanges.

Any legitimate enterprise of value, whose securities are not listed on the New York Stock Exchange, if approved by the Security Committee, on the payment of registry fee of \$100, may have the same listed and publicly "called" and transactions recorded and published in the official report of the Exchange and the daily papers.

Incorporated Companies desiring to list, will please fill out attached application and return same to Secretary. Applications should be accompanied by a check for the amount of registration fee, payable to order of the Treasurer, Arthur B. Graves, Esq.

It is desired to secure, as far as possible, as members, those persons who will contribute to the success of the Exchange. The co-operation of parties at present dealing in Electric, Manufacturing and Miscellaneous securities is especially invited.

This Exchange is limited to *five hundred members*, and commences with a membership of over two hundred.

It has been resolved to close the subscription books for the first limited allotment of seats, at \$250, prior to the official opening of the Exchange, December 3d.

Application blanks may be had of, and subscriptions made through and payable to the order of

THE THIRD NATIONAL BANK, No. 20 Nassau Street;
THE ST. NICHOLAS BANK OF N. Y., No. 7 Wall Street;
THE CHATHAM NATIONAL BANK, No. 196 Broadway; or
MESSRS. HAGEN & BILLING, Bankers, No. 1 Wall Street.

All applications must be accompanied by check, name and address of applicant. (The right to reject reserved.)

Application blanks for membership or listing can be obtained, also list of members seen and subscriptions made, at the Secretary's rooms, No. 11 Pine Street.

ALBERT H. JOCELYN,
Secretary.

New York, November, 1883.

1883.

To the President and Directors of the

ELECTRIC, MANUFACTURING AND MISCELLANEOUS STOCK EXCHANGE,
of New York, (Limited.)

We desire to have our Company registered and the shares of our capital Stock listed and "called" on your Exchange, and for which privilege we agree to pay the regular fee of \$100 as established by your Exchange.

(Company) _____

(Signature) _____

(Address) _____

(Character of Company) _____

1883.

~~THE~~ ST. NICHOLAS BANK OF NEW YORK,

No. 7 WALL STREET,-

New York City.

GENTLEMEN:

Hand herewith check for two hundred and fifty dollars,
order of ARTHUR B. GRAVES, Treasurer, as subscription for one
Membership (five shares) of the

Electric, Manufacturing and Miscellaneous Stock Exchange,
OF NEW YORK, (Limited.)

Name of Applicant for Membership _____

Address _____

70
L
6

Idée - Météor

Marly le 29 Decembre 1883.

A Monsieur T. A. Edison

Très Honoré Monsieur.

Ayant inventé un compteur
d'électricité assez simple, pratique, juste et
facile à régler, je viens m'adresser à vous,
Monsieur, pour vous demander si vous voudriez
bien prendre en mon nom les brevets pour
l'appareil en question; ne possédant pas
moi-même les moyens nécessaires pour cela.
Cependant, il serait nécessaire, pour éviter
des frais, peut-être inutiles, que j'eusse une liste
des brevets pris pour les compteurs fondés sur
une action chimique.

Vous auriez, Monsieur, en compensation, le
droit exclusif d'acheter les brevets dont le prix
serait fixé par des arbitres à défaut d'entente
entre nous. Vous conserveriez cependant toute
votre liberté à cet égard.

Si ma proposition est agréée ou si au
contraire vous en avez d'autres à me faire
venir, si il vous plaît me favoriser d'une
prompte réponse.

Si cela ne vous donne trop d'ennui, veuillez

me répondre en français.

Après tes honnres Monsieur mes salutations
respectueuses.

O Dutoit

Adresse.

O Dutoit Delafontaine

Marly

Canton de Fribourg Suisse

ask Hager how much shrinkage
in 8 x 6 x 6 - good life - E
Stenger out Brooklyn Bridge

Fixing Brooklyn spans

Indicators for Sumbury Shamokin
Lawrence and Mookton

Valt boxes to Andrews; ~~Indicators~~

~~Sullivan delay~~ ~~too~~ Dodge too many
delays not making money
~~conference~~ ~~about~~ ~~at~~ ~~the~~ ~~last~~ ~~week~~

Press & Valt boxes for Germany & Scotch

State Committee

Winding machine lower res to feed
to get more ~~into~~ - Double brushes

Copy bldg & map all stations Berlin

~~ask~~ ~~about~~ ~~the~~ ~~new~~ ~~paper~~ ~~all~~ ~~the~~ ~~time~~
~~Berlin~~ ~~the~~ ~~new~~ ~~paper~~ ~~all~~ ~~the~~ ~~time~~
How about new paper? Catch spring
Adams' Witten - Deposition of have paper
Compound wire press etc,

Seeing if we have claim
of exhausting or lamps
without heating Carbur

Lamp breakage book for station
Meter account books also
general account books - E

Cotton form UOlean

Ypsilanti & Hillsdale Est
Piquette = Mouchelchuck -

Grammer III on know 118 fiscal year
Fall River - Halsey the front hall
Halsey the front hall
also at 0325

(1883)

STORAGE BATTERIES.

Statements are made to the subsidiary Brush companies that they have a large investment laying idle 10 hours daily and that with the storage batteries and incandescant lamps they would be enabled to utilize their plant all day long and thus earn a great deal of money. This appears to be a self evident proposition, but the fallacy lies in the fact that the batteries required to store the product of the station would call for an increased investment twice as great as already invested in the station - which increased investment has an enormous depreciation $2\frac{1}{2}\%$. The negative plates of all secondary batteries are soon eaten away and have to be renewed frequently. The batteries rapidly diminish their capacity for storage and have to be made up fresh.

Only about two thirds of the current in a battery can be taken out as the current otherwise would be too weak to bring up the lamps. Hence there must be one third greater investment in batteries on this account. In addition there must be extra batteries which have to be thrown in from time to time to keep up the candle power of the lamps. The batteries are liable to all kinds of disorders there is creeping across the space between the electrodes of metallic lead produced by electrolytic depositions; there is local action in the battery which causes the stored up energy to be rapidly dissipated; the sulphuric acid gradually combines with the oxide of lead which covers the active material of the battery increasing its resistance - the exhaustion

(1883)

2

of the sulphuric acid stops the action of the battery.

The experiments on the best form of secondary by Tresca of the Conservatoire des Arts et Metres shows that 190 lbs. of material is required to commercially store one horse power for one hour. The cost of the completed battery with its mechanism--the labor--the power required for forming--will bring its cost up so that it cannot be sold with any degree of profit for less than 35 cents per lb., making say \$6.50 per light.

With this data take a Cotton mill requiring 250 lights, where the longest time of lighting in any one day is two hours, and with 10 lamps of 16 candles per horse power of current.

Battery for 250 lights at \$6.50 per light, per hour for two hours amounts to \$3250. About 50 per cent was the return obtained by Tresca, from the dynamo but it would not be more than 45 per cent from the indicated horse power of the engine, but say 50 per cent. 250 lights require 25 horse power per hour to work the lamps, 50 per cent loss allowed for between the engine and the lamps. 50 indicated horse power per hour is required. Hence for two hours 100 horse power is requisite. If now a small dynamo is used to charge for 8 hours, it will require 12 horse power; price of dynamo \$1200., making total investment \$4450. 100 horse power for one hour (or 12 for 8 hours) consumes 400 lbs. coal. This for 300 days would require 60 short tons at \$4. \$240.

(1883)

3

Coal.....	\$ 240.
Depreciation and interest on small dynamo.....	120.
Depreciation on batteries (25 per cent).....	812.
Interest on batteries.....	195.
Hence expenses.....	1367.
To work direct would require one 250 light machine at 3000.....	3000.
35 horse power for one hour or 70 for two hours; 4 lbs. coal, 280 lbs. 300 days, 42 short tons at \$4.Coal.	168.
Interest and depreciation on dynamo.....	300.
Investment.....	3000.
Running expenses.....	468.

If the hours of lighting are increased to 3 hours or any more hours, the investment by the direct system does not increase, only the coal.

While by the storage, the investment both in dynamos and batteries increase directly to the hours of lighting. If instead of two hours lighting we require four hours lighting, the figures would stand thus:

BATTERY SYSTEM.

Investment in dynamo.....	\$ 2400.
Investment in batteries.....	6500.
Coal.....	480.
Depreciation and interest small dynamo.....	240.
Depreciation of batteries.....	1624.

(1883)

Interest on batteries.....	390.
Hence investment.....	8900.
Running expenses.....	2734.
Direct system dynamo.....	\$ 3000.
Coal.....	336.
Interest and depreciation--Extra depreciation for extra two hours.....	350.
Hence investment.....	\$ 3000.
Running expenses.....	686.

With six hours lighting the dynamo required to charge the storage batteries in eight hours would be as large as the dynamo used for lighting direct, hence the charging dynamo could light the works direct without the batteries.

Even supposing Mr. Brush had obtained a theoretically perfect battery, the figures would be enormously against him. The fact of the matter is that the "shorter the period of lighting required from storage batteries the greater their economy, and this reaches a maximum when they are not used at all."

(1283)

OK Saw this

MEMORANDUM ON RESOLUTION.

The great number of poles erected in the streets of the City by the different electrical companies have for some time past been a source of serious complaint. They not only disfigure and obstruct the streets but injure the property in front of which they are placed. The poles furnish a ready means of communicating fire and the wires strung to them frequently interfere with the efficient working of the fire department.

While the recent discoveries in electricity have made it applicable to many new purposes, it would seem that the corporations employing them have paid no regard to the appearance or safety of our streets, and the authorities without objection have allowed the occupation of public property for private enterprise until the nuisance has become so great as to call for an immediate remedy. Not only in New York but in all the large cities it has become apparent that the free use of the streets will be destroyed unless some check is put to this rapidly growing evil. Washington and Chicago have taken the initiative and New York should follow their example. That they are unnecessary is a matter long since demonstrated, and their erection is due solely to a desire for economy on the part of the many corporations erecting them, at the expense of the City and to the detriment of its streets. Their right to erect them at all is a question of grave doubt, there is certainly none as to the right, and little as to the duty, of the City to exact compensation for the property thus occupied, and when it is considered that some six thousand poles have been

erected in the past few years without the payment of any revenue, it is at least time that some decided action should be taken by this Board, in whom the control of the streets is vested, and especially in this so when it is a matter of general notoriety, and is a fact that can be easily verified by any traveller upon our streets, that an ordinance of this Board, making it a misdemeanor for any company to erect any pole within ten feet of any lamp post or fifty feet of the nearest telegraph pole, has been in numerous instances violated and is being violated every day. The authorities assure duty it is to see that this law is enforced have been guilty of the grossest neglect, and the corporations have treated it with contempt.

While it is the manifest duty of this Board to take some action to remedy and prevent the continuance of this evil, that it may do so intelligently, a Committee should be appointed to enquire into the entire subject, and as the enquiry is one requiring the consideration of legal questions of importance, the Committee should have the aid of counsel to assist and direct them.

The law officers of the city are more than occupied by the ordinary duties of their offices. The calendars of the courts are blocked with cases they are unable to attend to, even in these, special counsel have often to be employed, and as the Committee should, for the proper performance of their duty, have the aid of counsel able to devote the necessary time to their labors, power should be given them to employ special counsel in case they deem it necessary.

(1883)

PROSPECTUS

OF THE

UNDERGROUND WIRE COMPANY.

It is proposed to organize a company with a capital of 7,000 shares of the par value of \$100 each, to be called The Underground Wire Manufacturing Company.

The objects of the proposed company are to manufacture, sell and use lead-covered wires, for telegraphic, telephonic, lighting, and any other purposes for which electric wires are used.

Contracts have been made for the purchase of the Berthoud-Borel Patents for the United States, they having proved the most practicable used in Europe, upon very favorable terms, and it is proposed to begin the manufacture at as early a date as possible.

The necessity for placing all electric wires underground, at least in cities, is so evident that the newspaper press in all parts of the country has incessantly demanded legislation to that effect, and the Legislatures of several of the States and municipal authorities in many cities have already passed such acts. It is but a short time until all the States will do the same. The different telegraph and electric light companies have fully admitted the desirability of an underground system that could successfully be worked at a reasonable cost. Many costly experiments have been made in Europe, and, recently, in this country. The problems to be solved are, first, that a method should be invented by which great lengths of cable might be manufactured at once; and, secondly, that an insulating material should be found and applied in such a manner as to be less expensive than gutta percha or India rubber. These difficulties are successfully surmounted in the process of Messrs. Berthoud & Borel, by means of which great lengths may be manufactured very rapidly and at a great saving of expense as compared with any process previously in use. A copper wire is wound in cotton and bathed in rosin and paraffin, the whole hermetically enclosed in perfect contact, and under pressure within a lead envelope. Cotton bathed in paraffin and protected from moisture is an excellent insulator. Experiments made on an extensive scale have proved that it may replace gutta percha and India rubber. And lead is the best possible protec-

tion from moisture. The practicability of these cables is thoroughly attested by their very general use in France and on the continent of Europe. At the recent French Exhibition the Company Jablockhoff made use of them to send the current to the electric candles and to the different motors in motion. Fifteen thousand metres conveyed power and light to different parts of the palace; 5,000 metres were laid by the same company for Jablockhoff lights at the opera. Cables containing many wires were placed in the sewers to connect the Ministry of Posts and Telegraphs with the Exhibition. Some kilometres were laid in the sewers for telephonic purposes. New and extensive contracts have also been entered into with the Parisian Telephone Company.

These cables are, however, comparatively little known in this country, owing to the great expense of shipment and a tariff of 47½ per cent. They have been thoroughly tested, however, by some of the best known electricians in the United States, the results of which are here appended.

The French Company (The Société Anonyme des Cables Electriques), has extensive factories at Cortailod, near Neufchatel, Switzerland, and at Grenelle, near Paris; and have paid large dividends since organization. The schedule of cost provided by the company is very minute, and enables a very accurate estimate of the cost of manufacture in this country. The materials used are nearly all cheaper here than in France, and the item of labor is so insignificant in cost by this process that it can safely be said that telegraph, telephone and light companies can be supplied with cables in large quantities at a price considerably below that at which the same class of wires can be placed overhead, and still leave a large profit on the manufacturing.

Each of the Berthoud-Borel machines constructs over three miles of completed cable in a day of ten hours, and requires the attendance of but one man.

These cables being the best as well as the cheapest manufactured will necessarily be the ones most in use. At present an Underground Telegraph Company, intending to lay underground wires through the country as well as in the cities, is successfully experimenting with them.

As soon as subscriptions to the stock of the Underground Wire Company shall have been received to the amount of \$300,000 a meeting of the subscribers will be held to perfect an organization.

Subscriptions received and information given by

FREDERIC B. ESLER,

49 Exchange Place, N. Y., and

N. E. corner 3d & Chestnut Streets, Phila.

TESTIMONIALS.

New York, April 25, 1882.

Having had in use for the past nine months 680 feet of your cable, I take pleasure in attesting its superiority over any other that I have tried.

It has stood the severest tests, and is giving entire satisfaction.

Yours truly,

R. J. SHEEHY,

Late Supt. Brush Electric Illuminating Co. of New York.

9th May, 1882.

DEAR SIR: Referring to your favor of 6th inst., I beg to state that I think the Berthoud-Borel cable is the most practicable cable at present made.

Yours truly,

THOS. A. EDISON.

THE JARBLCKHOFF ELECTRIC LIGHTING COMPANY.

CHARLES A. CHEEVER, Gen'l. Manager.

JULES GARCIA, Electrician.

61 AVENUE DE VILLIERS, PARIS.

5 TRIBUNE BUILDING, (P. O. Box 3592),

NEW YORK, December 17th, 1881.

GENTLEMEN: I am pleased to report to you the results of the tests made at our laboratory, corner Twenty-fifth Street and Sixth Avenue, on Saturday, Dec. 10, 1881, with your wires for electric light purposes, submitted to me for trial.

There were in circuit from our Five-Light Dynamo Machine, one piece of No. 22 copper wire, covered with cotton and six inches in length; next to this was a three feet piece of the Berthoud-Borel lead-covered wire No. 22; then one foot of wire covered with gutta, and, lastly, another piece of No. 22 cotton-covered wire.

The result of the first trial was the warming of the cotton-covered wires to a small extent, but with no effect on the light or wires.

A second trial was made with the same wires as above mentioned on a sixteen-light machine. The result of this test was that the cotton covers on the first and last wires commenced to smoke, then to burn with a bright flame, and were finally consumed. The first, third and fourth wires were heated to that extent that they melted, and the circuit was broken.

On testing the lead-covered wire with the telephone, after the first experiment, it was found to be perfect; and after the second test had been made, the lead-covered wire was again tested with the telephone, and their insulation found perfect. An incision was then made in the centre of this wire, and the insulating material found intact and uninjured.

Yours truly,

(Signed)

WILLARD L. CANDEE,

Sup't.

The foregoing trials were made in the presence of our Superintendent and Assistant Electrician, who have read the foregoing report, and state to me that the same is correct.

(Signed)

CHAS. A. CHEEVER,
Gen. Manager.

EXECUTIVE OFFICE,
WESTERN UNION TELEGRAPH COMPANY.

NEW YORK, December 20th, 1880.

DEAR SIR: I have tested for electrical qualities a sample of the new underground telegraph cable, patented by Messrs. Berthoud & Borel. The piece upon which I experimented is intended for use in connection with the electric light at Menlo Park, and is composed of a single conductor of seven No. 14 copper wires, covered with three or four layers of cotton, saturated with paraffin and resin, and protected by a covering of lead. As you are familiar with the process of manufacture I will omit description.

The sample referred to is 100 metres (about 328 feet) in length, and at a temperature of 15.5° C. (60° F.), after being immersed in water several hours, tested as follows:

@ 60° F.

Insulation resistance (after 1 minute), 29300.-Megohms.

Inductive capacity, .03065 Microfarads.

Loss of charge, after 1 minute, 3.7%; after 10 minutes, 22.4.

Insulation, 1820.-Megohms per mile; 2730.-Megohms per kilometre.

Capacity, 0.4935 Microfarads per mile; 0.3065 Microfarads per kilometre.

Considering the nature of the material, the insulation of this cable is remarkably high; aided, no doubt, by being kept from contact with moisture by the lead pipe. Its inductive capacity, which was probably increased to some extent by the cable being coiled on a small reel, is higher than that of either gutta percha or rubber, but this is a factor of no great importance in cables under one hundred miles in length.

Very respectfully,

GEO. B. PRESCOTT, JR.,
Asst. Electrician.

The Committee for the Company of Musketeers of Cortaillood certifies:

That in September, 1880, the factory of Messrs. Berthoud, Borel & Co., at Cortaillood, laid, for use at our shooting gallery, a telegraphic cable 300 metres in length, $\frac{1}{8}$ " in, with twelve copper conducting wires enclosed in lead tubing; that this cable, laid in the marshy ground of the lake, works, and has worked since it was laid, to our entire satisfaction; that the cable has remained in a perfect state of preservation, and has never suffered nor been out of order from use.

Cortaillood, 13 Oct., 1882.

(Signed) L. MEUTHA—H. F. POCHIN—THONEMBART.

Presented for legalization of signatures by H. F. Pochin, Thonembart and L. Meutha, representing the Company of Musketeers of Cortaillood, and declared exact by the undersigned.

Cortaillood, 13 Oct., 1882.

(Signed)

HENRY, Notary Public.

PARIS, Nov. 22, 1881.

Comp. Générale d'Électricité.

Messrs. Berthoud, Borel & Co's Electric Cable Co.—Limited—Paris:

DEAR SIR—In returning to you the cable you were kind enough to place at our disposal during the International Exhibition of Electricity, I wish to express to you our thanks, and to tell you that it met with entire satisfaction.

Respectfully yours,

PARENT,
Chief Engineer.

22
Berthoud Borel
cable

1883. Electric Light - Ansonia Brass & Copper Company (D-83-021)

This folder contains documents relating to Edison's dealings with the Ansonia Brass & Copper Company, which supplied the copper wiring and tubing for the construction of Edison central stations. Much of the correspondence is by A. A. Cowles, secretary of the company.

Approximately 60 percent of the documents have been filmed. The following categories of documents have not been filmed: routine correspondence regarding shipping and production matters; orders; bills and receipts.

W.E. Dodge, Jr., Pres.

G.P. Conley, Vice Pres. & Treas.

A.A. Conley, Secy.

331883-03-30

Ansonia Brass & Copper Co.

No. 19 & 21 Cliff Street, New York

P.O. Box 2315.

Stenographic Letter

New York Mar. 20th 1888

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

I am in receipt of your esteemed favor of this morning, and thank you for the interest you are taking in introducing our wire in England and the Colonies.

I will furnish you samples as soon as I can get them prepared, which will be in a few days.

I send herewith, copy of our cable with the Societe Edison, as requested.

I remain, Very truly yours.

A. A. Conley, Sec'y.

1883-03-30

THE ANSONIA BRASS & COPPER CO.

Nos. 19 & 21 Cliff Street,

New York, *Mar. 27th 1883.*

COPY OF TELEGRAMS exchanged with *Forêt's Edison, Paris, France.*

SENT BY THE

ANSONIA BRASS & COPPER CO.

RECEIVED BY THE

ANSONIA BRASS & COPPER CO.

Mar. 26th Edison, Paris - France

*House wire all size
274 delivered on
ship here, for all
countries except
France. Patented
there, - cannot send.
Yours Cordell.*

W.E. Dodge, Jr. Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-C3-30

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.
No. 19 & 21 Cliff Street,

New York Mar. 20th 1882

R.G. Box, 2075.

Stenographic Letter

Thos. A. Eason Esq.

65 Fifth Ave, City.

Dear Sir:

I am in receipt of your esteemed favor
this morning, with order for Insulated Wire for Hamburg and
Antwerp, which will receive prompt attention as per your di-
rections. I shall be at our Factory to-morrow, returning
early next week, and will then give you some definite informa-
tion regarding probable date of shipment &c as requested.

Thanking you for the order, I remain,

Very truly yours,

Sec'y.

W.D. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

321883-04-04

Ansonia Brass & Copper Co.

21 Cliff Street,

New York, Apr. 4th 1888.

PAID 27th

RECEIVED L. L. L.

Thos. A. Edison Esq.

85 Fifth Ave, City.

Dear Sir:

Referring to orders recently placed with me for Patent Insulated Wire for your Co. in Paris, I have to say that I can ship, say 10,000 lbs of the wire, assorted, in about two weeks, and about 10,000 lbs each week thereafter. - I trust this will be satisfactory. - I will write you further respecting samples of wire for export, in a few days. I remain,

Very truly yours,

W.D. Dodge Secy.

W.E. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-04-13

A.A. Cowles, Sec'y

Annuaire Brass & Copper Co.
Nos 19 & 21 Cliff Street

AG 80x211A

Stenographic Letter

New York Apr. 18th, 1888

Thos. A. Edison Esq.

65 Fifth Ave, City.

Dear Sir:

I have decided to name you a lower figure than last quoted, for bare Wire. - I will amend my price now to make quotation 24cts instead of 25 as last quoted. I trust this will be satisfactory.

I enclose herewith, letter which I have addressed to Mr. Batchelor in reference to working our Patent for France.

You kindly offered to forward this letter to him, with some recommendations of your own. Will you oblige me by sending it to Mr. Batchelor with such comments as you wish to make?

We are obliged to work our Patent in France and would prefer to do it through your Co.

I remain,

Very truly yours,

Sec'y.

W.E. Dodge, Jr., Pres.

G.P. Charles, Vice Pres. & Treas.

A.A. Charles, Secy.

Amsonia Brass & Copper Co.
No. 19 & 21 Cliff Street,

A.O. Box 2315;

Telegraphic Letter

New York Apr. 14th 1883

Charles Butcheior Esq.

Société Edison, - Ivory S S, Pre Paris,
 France.

Dear Sir:

At the suggestion of Mr. Edison, I write you concerning the manufacture of my insulated wire in France. As the wire is patented there, we cannot ship it from here, and we shall be obliged to establish a manufactory in France if we are to sell it in that country.

From my recollection concerning your Factory I judge you have ample room and power for fitting up at very small expense to make this wire. A rough estimate of the cost for fitting up for a capacity say of 80,000 lbs per month of this wire would be as follows, - no allowance being made for shop room or power, - i. e., say for machinery, \$1,000. By running more than ten hours a day you could increase the capacity without putting in any more machinery.

The space occupied by these machines would not be great. It would require seventeen braiders, and a certain amount of drying room to dry the wire before it is shipped.

Should you desire to manufacture this wire we could give you full particulars and drawings how to construct the machinery and how to insulate the wire as well as we could insulate it here, and we could if desired, purchase the braiders here and ship them to you complete.

Starting from our wire at a cost of 20cts per lb, (which I understand is about the price you have to pay in France,) the cost of the insulated wire complete, including labor and all necessary expense, would be between 20 and 21cts per lb.

This would enable you to pay us a royalty for working under our Patent, of say two and one half cents per lb, and leave you a handsome profit besides. Our present lowest price in

this country for this kind of wire is 27cts net for the turn-
 (continued.)

[ENCLOSURE]

W.E. Dodge, Jr., Pres.

G.P. Conley, Vice Pres. & Treas.

A.A. Conley, Secy.

Ansonia Brass & Copper Co.
No. 19 & 21 Cliff Street

R.O. Box 2315

New York Apr. 14th 1883

Teletype Letter

(Chas. Butcher, page 2.)

nest size, and 81cts net for Nos. 18 to 20 Brown & Sharpe's gauge.

We could at present supply you with bare wire should you prefer to purchase it in this country, at 80cts per lb delivered f. o. b. in New York, although we would make no profit by doing so, as it is much lower than the market price here. If we supplied the wire at this figure it would only be in order to assist you in working our Patent, by giving you the best quality of wire.

We have also a Patent in Belgium, and would ask your good offices in going through the formalities there necessary to sustain the Patent, say by manufacturing a certain quantity of wire in that country.

I shall probably take out other patents in France for improvements which I have in view, and if you undertake to manufacture this wire we will of course arrange to give you the privilege of all the French patents we may have in that line.

Should this strike you favorably, of if you have any suggestions to make concerning it, I shall be very happy to hear from you.

I remain,

Very truly yours,

W.E. Dodge

W.E. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-04-20

A.A. Cowles, Sec'y.

Ansonia Brass & Copper Co.
Near 19 & 21 Cliff Street,

New York, Apr. 20th 1883

AS 884215
Stenographic Letter

Samuel Insull Esq.

Ans June 11 1883

85 Fifth Ave., City.

Dear Sir:

I have received your esteemed favor of
Apr. 18th.

I am glad to know that Mr. Batchelor will shortly be
in this country, and shall take pleasure in talking with him on
the subject of Braided Wire &c. - You will please therefore
consider the letter I have written Mr. Batchelor withdrawn, un-
less you have already sent it forward.

Mr. Edison spoke to me some time since about furnish-
ing a Galvanometer for testing the conductivity of electric
wire. We are in want of such an instrument; - should like to
know how soon it will be finished.

I have heard nothing from you yet respecting wire
for village plants, although I sent Mr. Edison quotation last
week of 24cts per lb.

Very truly yours,

A. A. Cowles

Sec'y.

W.E. Dodge, Jr., Pres.

R.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

Ansania Brass & Copper Co.
No. 19 E 21 Cliff Street,

New York Apr. 28rd 1882

R.D. 805, 2375.

Telegraphic Letter

Samuel Insull Esq.

85 Fifth Ave., City.

Dear Sir:

I send herewith half a dozen samples, of each size of our Patent Fireproof Line and House Wire. -

It is kindly offered to send these samples to the different U's using your system in England, or elsewhere in Europe.

They should not however be sent into France, on account of the Patents there.

This wire we will furnish now for export at 27cts net for all sizes. I believe it is cheaper than any similar wire manufactured in Europe, and it is certainly far better.

I also send herewith table of weights of this wire.

We are now manufacturing a wire of this kind that is waterproof as well as fireproof, - that is to say, it is sufficiently waterproof to resist dampness and vapors, although not suitable for use under water. - For this wire at present we charge 10cts per lb extra, but we may reduce the price somewhat when it is manufactured in quantities.

Trusting that we may be favored with your orders,

I remain,

Very truly yours,

A.A. Cowles
Sec'y.

W.E. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

1883-05-16
Ansonia Brass & Copper Co.

No. 19 & 21 Cliff Street,

P.O. Box 2375.

New York May 16th 1883

Telegraph

Thomas A. Edison Esq.

65 Fifth Ave, City.

Dear Sir:

Mr. Batchelor requested me to furnish him with quotations for Magnet wire such as you were going to use for your new dynamo. If you will kindly give me specifications of sizes, quality of insulation &c, I shall take pleasure in complying with Mr. Batchelor's request. I understand you have made some changes in your dynamo machine, and I do not exactly know what wire would be required.

I remain,

Very truly yours,

A. A. Cowles Secy.

W.E. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-05-25

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.
Nos 19 & 21 Cliff Street

ROBEX 2116

Stenographic Letter

New York May 25th 1883

Samuel Insull Esq.

85 Fifth Ave, City.

Dear Sir:

I have received your esteemed favor of May 22nd with Mr. Deane's letter giving sizes of insulated wire to be used for your new dynamos.

It will be necessary before I am able to quote you price, to know what is the thickness of cotton on hard triple cotton covered and camphor covered copper wire.

Would you have the kindness to procure me a small sample of this wire, so that I can figure cost of producing it, as we have not made any of this description for Mr. Deane.

Double cotton covered No. 16 we are now making, and of course know what the price should be.

Mr. Greenfield has not yet called to give instructions concerning warmer in which you want your bare wire put up, but I understand that he will call to-day. The wire will be ready soon and we should like to know just how it is required.

I remain,

Yours very truly,

A.A. Cowles Sec'y.

W.E. Dodge, Sec'y

G.B. Cowles, Sec'y

A.A. Cowles, Sec'y

Amos & Co. & Co. & Co.
No. 19-21 Cliff Street

ARABIA

Chronographic Letter

New York June 29th 1883

Samuel Insull Esq.

65 Fifth Ave, City.

RECEIVED
JUN 3 1883
ANSWERED

FILE NO. 183...

Dear Sir:

Regarding price at which we will furnish wire for dynamos to Mr. Batchelor, I have to say, I cannot give rates for triple covered wire until I have heard from our Factory, which will be in a few days. Regarding double covered wire- No. 18 Birmingham Wire Gauge- we have to say that our lowest price for this country, to you, is 81cts per lb net but for wire ordered direct for export by Mr. Batchelor we would not the price 89cts net cash f. o. b. New York. This however must not prejudice our price to you in this country, which is as low as we feel like making.

In a few days I will communicate with you regarding the triple covered wire of which you sent me sample.

I remain,

Very truly yours,

A.A. Cowles, Sec'y.

by *W. J. Smith*

you
for
the
last
10
th.
or
Ba
you

June 18th.

A. A. Cowles, Esq. Secty.

Ansonia Brass & Copper Co.

19 Cliff street, City!

Dear Sir:-

Your favor of the 11th. inst. came duly to hand this morning, & I have written to Mr. Batchelor quoting him the prices you mentioned.

Very truly yours,

06 F/11/12

1883-06-12

1883-06-11

P. T. Hunt, Pres.

G. P. Cowles, Treas. & Secy.

A. A. Cowles, Secy.

Ansonia Brass & Copper Co

No. 19 & 21 Cliff Street,

New York June 11th 1883

Box 2375.

Stenographic Letter

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

Replying further to your inquiry concerning price of Insulated Wire for export, to Mr. Batchelor, I have to say that triple wound .085 same as sample furnished we can sell for export at 37cts per lb net cash.

I have already written you concerning the double wound Magnet Wire, and I understand that you will communicate with Mr. Batchelor, - therefore I have not written him.

If you wish me to write direct to Mr. Batchelor please inform me, as I understood you were to communicate directly with him.

I remain,

Very truly yours,

A. A. Cowles, Sec'y.

June 21st. / 1883

Ansonia Brass & Copper Co.

19 Cliff Street, City.

Dear Sir:-

I have your favor of the 20th, stating that the balance of order No. 1 will be shipped on Friday and part of order No. 12 at the same time. I trust you will endeavor to ship the whole of order No. 12 at that time, as otherwise my men will be waiting at Shamokin for the wire, which will cause me considerable expense.

Very truly yours,

1883-06-20

G.P. Cowles, New York & Texas.

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.

No. 19 & 21, Cliff Street.

New York June 20 1883

Mr. Thos. A. Edison

65-5 Ave. City

Dear Sir-

We expect to ship
the balance of the Bare
Copper Wire on your
order #1 May 21st on
Friday, also a part of
not all on order #2
May 28th at the same
time.

Very truly
Ansonia B. & C. Co.
Sincerely

W.E. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-07-25

A.A. Cowles, Sec'y

Ansonia Brass & Copper Co.
No. 19 & 21 Cliff Street

NO. 207, 2215

Stenographic Letter

New York July 26th/88

Thos. A. Edison Esq.

65 Fifth Ave., City.

Dear Sir:

I have received your esteemed favor of
July 24th.

I regret that there has been so much delay in filling your orders for copper rods. - The only explanation I have to offer is this. - After the orders were placed and well under way, we received instructions to groove the rods in a certain manner. Our instructions were somewhat vague, and some time passed before we could quite determine what was required.

We finally submitted samples to Mr. Kruesi which were approved of, and we then went ahead with the work. - This will account for a portion of the delay. Furthermore, Mr. Insull instructed us to set aside all this work in order to get out the large order for Louisville, which we did, according to his instructions. I told him distinctly that other goods must wait if this was done, and he agreed to it. I should be happy to see Mr. Insull here.

However, the rods are all being finished at present, and I saw large quantities of them in the Works at Ansonia a few days ago, so I am confident you will get most of them soon.

The telegraph is not working well but I have sent a message to Ansonia to ascertain when you can expect these goods, and will give personal attention to the matter hereafter. Hope you will have no further cause of complaint.

I remain,

Very truly yours,

A.A. Cowles Sec'y.

D 1883 Edison, T.A. + Personal
W.E. Dodge, Jr. Pres. G.P. Conley, Vice Pres. & Treas. A.A. Conley, Secy.

Ansonia Brass & Copper Co.

No. 19 Cliff Street

P.O. Box 1338

New York Aug 3 1883

Edison
Samuel Insull Esq,
65 Fifth Ave N.Y.

Dear Sir:

Will it be
convenient for you to give us check
tomorrow morning (if we send up) for
to J.A. Shaw Construction Lp - Janesville
due July 2nd \$10858.00? We have
some heavy payments & need all the
collections we can get in - Please
telephone (Muller) on receipt of this
which time I shall send up tomorrow -
Yr Obedt Servt
Ansonia Brass & Copper Co
for Muller, Treas.

W.E. Dodge, Jr., Pres.

G.P. Condes, Vice Pres. & Treas.

1883-08-08

A.A. Condes, Secy.

Ansonia Brass & Copper Co.
No. 19 & 21 Cliff Street

RO. 806, 2115

Stenographic Letter

New York Aug. 8th 1883

Samuel Insull Esq.

C-O Thomas A. Edison, 65 Fifth Ave, City.

Dear Sir:

Your esteemed favor of Aug. 4th. is at hand. I am expecting samples of the wire concerning which you and Mr. Johnson spoke to me. - Will probably have sample to-morrow and will forward it to you promptly on receipt. I think you will be satisfied with the wire which I have prepared for a sample.

Our price for Paragon wire- that is- double cotton covered, painted, and wound with tape before covering, which makes it waterproof and fireproof- is as follows. - To No. 12 Brown & Sharpe's gauge, inclusive, 27cts per lb net; - No. 13 to 18 B. & S. 41cts per lb net. We shall be pleased to receive your orders.

Regarding the price of copper rods, you are in error in supposing we said the price would be only one cent more than for wire. The price of rods is 2cts per lb more than wire, which only represents the extra cost of manufacture; therefore, when we bill wire at 24cts we bill rods at 26. The rods for which we charged you 27cts were grooved and cost us 1c per lb extra, which we charged you. Our present price for rods therefore is 26cts for plain, and 27cts for grooved, - subject to the special arrangement which I made with Mr. Edison.

Trusting this explanation will be satisfactory,
I remain,

Very truly yours,

Sec'y.

1 1883-08-13

W.E. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.

Ansonia, Conn. Aug 13 1883

AUG 14

FILE NO.

H. A. Edison Esq.

165 5th Ave N.Y.

Dear Sir

I sent you by express on Saturday, a sample of Cable made as follows.

2 Wires twisted with Keweenaw tape each wire then covered with braided Cotton one red & one white to distinguish them.

The 2 wires then laid together side by side & wound with Keweenaw tape.

Then over all a layer of double braided Cotton & this done insulation.

The finish of this cable is not good & I am sure we can improve it but my object

2 1883-08-13

W.E. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.

Ansonia, Conn. 1883

In submitting this sample to you I have gone into its insulation, working quality & and to know what change you would desire in the matter of insulation.

The wire is only partially fire proof owing to the inflammable nature of Keweenaw tape when large proportion of this is used.

I shall be in my Harmonium

Yours Truly

A. A. Cowles Secy

W.E. Dodge, Pres.

G.P. Conley, Vice Pres. & Treas.

A.A. Conley, Secy.

Ansonia Brass & Copper Co.

No. 19 & 21 Cliff Street.

P.O. Box 2375.

Chronographic Letter

New York Aug. 15th 1883

Samuel Insull Esq.

85 Fifth Ave; City.....

FILE NO.....

Dear Sir:

I am in receipt of your esteemed favor of Aug. 10th.

The arrangement made with Mr. Edison was not intended to include insulated wire.

I will however make a special arrangement to allow Mr. Edison 2cts per lb drawback on all the Paragon wire which he may buy at our regular prices.

Trusting this may be satisfactory,

I remain,

Very truly yours,

A. A. Conley, Secy.

P.S.

This does not apply to wire ordered by the Edison Co for incandescent lighting

1883-08-15

W.E. Dodge, Pres.

G.P. Conley, Vice Pres. & Treas.

A.A. Conley, Secy.

Ansonia Brass & Copper Co.

Ansonia, Conn. Aug 27 1883

Mr. A. Edison Esq.
Dear Sir:

I am a
happy to say I
cable wire which I think
you will find an improvement
on the last sent you.

Please let me
know what changes or im-
provements you have to suggest
and oblige

Yours truly,
A. A. Conley

W.E. Dodge, Pres.

G.P. Cowles, Treas. & Secy.

1883-08-30

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.
Nos 19 & 21 Cliff Street

P.O. Box 2375.

New York City 30 1883

Thos. H. Edison Esq
65 Fifth Ave
City

Dear Sir

Replying to your favor
of this date we intended shutting
down our wire mill Sept 8th
for one week, but if you
succeed in closing contracts, and
will notify us promptly we
will try and make other
arrangements so that there will
be no delay in executing ^{your} orders,
even if we have to defer closing
our mill —

Yours truly
G.P. Cowles Secy
Geo. Towell

W.E. Dodge, Jr., Pres.

G.P. Charles, Vice Pres. & Treas.

1883-09-10

A.A. Charles, Secy.

Ansonia Brass & Copper Co.
Nos. 19 & 21 Cliff Street,
New York

Sept. 10th, 1883

Stenographic Letter

THOMAS A. Edison Esq.

65 Fifth Ave., City.

Dear Sir:

I have received your esteemed favor of Sept. 8th.

We can make you the cable for inside house wiring, similar to the last sample sent you. As I understand it the last sample was wound with two colors of cotton on the outside and is what you want. Probably we can improve upon this in time, but we will make you up the quantity you name of this cable, and if in future we can make any improvements upon it we will do so. Our price for this lot of cable will be 45cts per lb net. After we have made this lot we shall be able to figure the cost carefully, and if we find there is room for any reduction in future lots we will make price as low as we can consistently, but I think 45cts is about right, as we have to handle it a great many times.

Please state how you wish this cable put up - whether in coils, or on reels.

Please bear in mind also that this is a new thing for us and we cannot get it out quite as promptly as we expect to do after we are in the way of manufacturing it.

We understand that you order by Stubbs' package as usual.

I remain,

Very truly yours,

Sec'y.

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-09-11
A.A. Cowles, Secy.

Ansonia Brass & Copper Co
No 19 & 21 Cliff Street

P.O. No. 2375

Stenographic Letter

New York *Sept. 11th 1883*

RECEIVED
SEP 12 1883
ANSWERED

Samuel Insull Esq.

FILE NO.

205 Fifth Ave, City.

Dear Sir:

Referring to our conversation
respecting triple covered wire for dynamos,
I have to say we are in position now to
furnish you any kind of wire that you use
at the Edison Machine Works, and if you will
kindly forward me samples of the triple
covered wire that you have been buying else
where I will arrange so as to be able to
fill your orders promptly, and will make pri-
ces satisfactory.

I remain,

Very truly yours,

Sec'y.

W.E. Dodge, Jr., Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-09-12

A.A. Cowles, Secy.

*Amesbury Brass & Copper Co.
No. 19 & 21 Cliff Street,
New York*

R.O. SINK, 2315.

New York Sept. 12th 1883

Stenographic Letter

Thomas A. Edison Esq.

65 Fifth Ave, City.

Dear Sir:

Your favor of Sept. 11th is at hand with information regarding cable wire, for which I am obliged. I will prepare the cable as soon as practicable. Regarding the price- as I have before stated, I will make it as reasonable as possible. It is a new article, and we do not know the cost.

If we find that we can afford to sell it for less than 45cts a pound we shall certainly make the price lower, as it would not be policy for us to charge an extravagant rate for this cable, but the wire has to be handled so many times that it makes very expensive work.

We have received an order from Prof. Colombo of Milan for the following wire, similar to that used by your Co. for house insulation- viz:-

1000 kilos No. 10-	1000 kilos No. 12
1000 " 14	600 " 17
500 kilos No. 20.	

He desires us to ship to the Co. at Genoa, and adds as follows. - "For the payment please to state which way you think best to adopt for the present and for future orders."

Regarding payment- the Edison Co. of Paris paid us cash on delivery here, and we discounted 1 percent for payment on presentation of B-L, and the bill was paid by you I think. I do not know the Co. at Genoa. Will you kindly inform me what arrangement you would advise me to adopt concerning payment? I would prefer to make the same terms as I did with the Edison Co. at Paris. -

Very truly yours,

Sec'y.

W.E. Dodge, Jr., Pres.

G.P. Cortles, Vice Pres. & Treas.

A.A. Cortles, Secy.

Ansonia Brass & Copper Co.

Ansonia, Conn. Sept 13 1883

Messrs. A. Edison & Co.

No. 65 5th Ave.

New York

RECEIVED
SEP 18 1883

Dear Sir,

I have carefully investigated the cost of making the cable such as we furnished from sample of and have come to the conclusion that we can furnish it in lots of 1000 to 2000 ft for 42¢ per pound.

Should you decide to place larger order say 10,000 ft at a time we could construct special labor saving machinery and doubtless reduce the cost so that we could afford to sell you the cable at 40¢ per lb.

W.E. Dodge, Jr., Pres.

G.P. Cortles, Vice Pres. & Treas.

A.A. Cortles, Secy.

Ansonia Brass & Copper Co.

Ansonia, Conn. 1883

A large item in the cost of this cable is the tape which we buy from the Electric Tube Co and which costs us 28¢ per pound net. This is considerably above the cost of the wire.

If any arrangement can be made by which we can buy the tape cheaper we can of course furnish the cable at a lower price.

For example if we can buy our tape at 24¢ per lb we would furnish cable for 40¢ in 1000 ft lots or 38¢ for 10,000 order.

Doubtless you may be able to arrange with Mr. Thayer so that he will understand that by reducing the price of tape the consumption will be increased.

W.E. Dodge, Jr., Pres.

G.F. Cowles, Vice Pres. & Treas.

1883-09-13.
A.A. Cowles, Secy.

Ansonia Brass & Copper Co.

Ansonia, Conn. 188

The Electric Ink Co have been
good customers of ours and
I do not wish to break them
down in their price but I
will write to Mr. Rumi and
perhaps a word from you to
him will help the matter.

Very sincerely yours

A.A. Cowles

Plain Color

P.S.

Please inform me what
color cotton you prefer for the
outside wrapping of your cable
I think one Plain color will look
better than the broken pole pattern
of sample sent you last a a

W.E. Dodge, Jr., Pres.

G.P. Charles, Rec. Mch & Times.

1883-09-19

A.A. Charles, Sec'y

Ansonia Brass & Copper Co.
Near 19 & 21 Cliff Street,

AG. Box 2316,

New York Sept. 19th 1883

Stenographic Letter

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

I have received your esteemed favors of this date.

Regarding samples of cable, they are now in the works and we expect to be able to furnish them very soon; I cannot say exactly when, but will push them forward with all possible despatch.

Regarding samples of wire submitted, I have to say we can furnish the .042 triple covered at 45cts per lb, and the .065 at 40cts per lb, net. We can however, use the Splitdorf liquid insulation- of which we control the Patent- and which we think you would prefer to the insulation as per samples submitted.

I wrote Mr. Edison about a week since regarding an order which I have received for insulated wire from Prof. Colombo of Milan, Italy. - Is there any arrangement by which this wire could be paid for here, provided we made a discount of 1 percent for cash, - or would you advise me to ship it without prepayment? Your reply will greatly oblige.

Regarding price of the braided cable, of which you submitted sample- I will have to figure on that and will quote price in a few days.

I remain,

Very truly yours,

A. A. Charles Sec'y.

THOMAS A. EDISON,

Central Station, Construction Dep't,

No. 65 FIFTH AVENUE,

1883-10-04

Form L.

New York, October 4 1883

copy
Thomas A. Edison
65 Fifth Avenue

A. J. Getty
To American Brass & Copper Co.
19 Cliff St.
A. J. Getty

445	7.707	in dia 30 ft. 4 in long	218	} 1 1/2 lbs Short
	7.633	" "	174	
16	7.592	" "	152	} 2 lbs Short
	7.548	" "	129	
	7.500	" "	109	} 2 1/2 lbs Short
17	7.454	" "	98	
	100.380	" "	196	
	6.671	" "	1156	26

300 56

3 bases . —

\$200

600

300 56

Mr Randolph
Debit Answer to
Credit Tube C

RECEIVED
OCT 11 1883
ANSWERED

FILE NO. 133

W.H.

Thos. Edison Construction Department

New York

1893		To. America Glass and Cement Co.				A.C.	
Month	Day	To. Mchrs	26 days 64c to July 1 st 1893				
Oct	15			55.44	✓	6,152.36	
	17			11.01	✓	1,049.68	
	23			10.12	✓	2,156.15	
	26					1,179.08	
	27			50.83	✓	8,141.11	
Nov	1					11.34	
	10			51.18	✓	1,315.03	
	5					131.110	
	1					11.11	
	10			57.59	✓	1,136.18	
	3			37.52	✓	854.18	
	9			3.50	✓	10.58	
	13					516.111	
	15			33.89	✓	13.15	
	16			31.18	✓	500.08	
	27			57.02	✓	1,315.31	
	28			1.51	✓	46.56	
	29			15.98	✓	559.03	
	29					15.90	
	28					36.11	
	8			16.50	✓	1,331.	
	31			89	✓	14.31	
	11					30	
	1					11.11	
	1					35.18	
	1					26.11	
	6			34.9	✓	1,331.61	
	16			15.91	✓	1,211.08	
	11			11.58	✓	363.01	
	13			19.18	✓	363.33	
	14			14.8	✓	54.51	
	1					51.11	
	1					33.11	
	21					0.02	
	1			33.15	✓	38.11	
	30					36.11	
	1					35.11	
	1					35.56	
	1					62.02	
	1			77.3	✓	42.61	
Dec	3			61	✓	31.60	
	4					138.46	
	1					64.11	
	1			123	✓	15.10	
	9			73	✓	11.96	
	12			15.7	✓	16.33	
Total brought forward				461.50	✓	90,193.18	

Nes. J. Edison Construction Department

1894	De	Arch	height	Scanned	46.1.35	26.1.93.15
Jany	15	Chiles	167 days & 60 ft to Antelope	6.58	/	23.6.31
	16	"	166	3.11	/	12.1.56
	21	"	"	"	/	4.3.08
	"	"	"	"	/	10.1.61
	"	"	161	4.03	/	11.9.53
	21	"	135	2.56	/	15.2.44
	28	"	134	66	/	2.5.43
	29	"	"	"	/	6.1.16
	"	"	153	"	/	11.1.15
	31	"	107	2.25	/	0.3.15
Feb	6	"	115	0.5	/	3.5.38
	11	"	"	"	/	1.4.6
	"	"	111	"	/	11.6.31
	11	"	116	3.03	/	13.0.65
	13	"	139	3.11	/	11.8.4
	16	"	135	1.53	/	8.1.10
	21	"	131	35	/	11.5.3
	28	"	136	1.18	/	4.6.10
	31	"	115	1.45	/	2.11.31
	11	"	111	1.1	/	5.6.41
Mch	18	"	110	1.33	/	2.3.43
	21	"	101	1.36	/	6.15.36
	23	"	106	1.36	/	2.3.13
	25	"	"	"	/	1.1.41
	"	"	95	11.13	/	6.13.31
	26	"	96	3.9	/	1.5.09
	28	"	95	13.15	/	0.6.38
	29	"	93	1.56	/	3.16.05
	13	"	91	2.95	/	2.35.50
	22	"	69	1.2	/	3.4.11
Apr	7	"	"	"	/	2.5.62
	"	"	"	"	/	1.6.113
	"	"	51	1.55	/	1.6.13
	13	"	15	3.1	/	1.3.06
	13	"	116	11	/	1.1.38
	17	"	211	10	/	13.6.0
	26	"	"	"	/	1.0.5.1
	"	"	35	1.3	/	6.1.36
	3	"	22	3.4	/	4.1.10
	10	"	26	0.5	/	1.1.0.1
May	16	"	111	0.7	/	2.5.38
	17	"	13	2.5	/	13.0.25
	18	"	12	0.6	/	2.6.52
	"	"	"	"	/	2.6.52
	"	"	"	"	/	2.6.52
June	1	"	35	1.3	/	4.7.5.0.7
	3	"	22	3.4	/	4.0.25.6
	10	"	26	0.5	/	2.4.6.5.13.3
July	16	"	111	0.7	/	15.6.7.1.8.4
	17	"	13	2.5	/	15.6.7.1.8.4
	18	"	12	0.6	/	15.6.7.1.8.4
Aug	1	"	35	1.3	/	4.7.5.0.7
	3	"	22	3.4	/	4.0.25.6
	10	"	26	0.5	/	2.4.6.5.13.3
Sept	16	"	111	0.7	/	15.6.7.1.8.4
	17	"	13	2.5	/	15.6.7.1.8.4
	18	"	12	0.6	/	15.6.7.1.8.4
Oct	1	"	35	1.3	/	4.7.5.0.7
	3	"	22	3.4	/	4.0.25.6
	10	"	26	0.5	/	2.4.6.5.13.3
Nov	16	"	111	0.7	/	15.6.7.1.8.4
	17	"	13	2.5	/	15.6.7.1.8.4
	18	"	12	0.6	/	15.6.7.1.8.4
Dec	1	"	35	1.3	/	4.7.5.0.7
	3	"	22	3.4	/	4.0.25.6
	10	"	26	0.5	/	2.4.6.5.13.3

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

1883-10-15

Ansonia Brass & Copper Co

Nos 19 & 21 Cliff Street

P.O. Box 2375.

RECEIVED

OCT 16 1883

ANSWERED

New York Oct 15 1883

Dear Sir,

Yours favor

of this date is at hand and in reply we have now of the cable you desire made up as yet, but has it in the works and are having it through with the utmost dispatch & expect it will be finished in about one week, we will then send you samples and will

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

1883-10-15

Ansonia Brass & Copper Co

Nos 19 & 21 Cliff Street

P.O. Box 2375.

New York 1883

also send wire to The P. Count as you direct =

Yours faithfully,
Ansonia Brass & Copper Co
Treasury

W.E. Dodge, Pres.

G.P. Conlcs, Vice Pres. & Treas.

1883-10-16

A.A. Conlcs, Secy.

Ansonia Brass & Copper Co
Nos 19 & 21 Cliff Street

P.O. Box 2375.

New York Oct. 16th 1883

stenographic letter

Saxuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

Your favors of Oct. 14th & 15th are at hand

I hope to know soon when we can ship the cable to
Shamokin as requested; we will do the best we can.

Regarding correspondence of Mr. Clark and Major Eaton
concerning the conductivity of wire, I understand nothing about
it and will have to see you in reference to it. I have only
to say regarding our wire, that I believe the conductivity is
the same as it always has been. We are not aware that there
is any change in the quality of our wire.

As soon as you are at liberty to see me please telephone
and I will come up to 65 Fifth Ave.

I remain,

Very truly yours,

Sec'y.

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-10-17

A.A. Cowles, Secy.

Ansonia Brass & Copper Co
Nos. 19 & 21 Cliff Street

P.O. Box 2375

Chirographic Letter

New York Oct. 17th 1883

Thos. A. Edison, Esq.

65 Fifth Ave, City.

Dear Sir:

RECEIVED

OCT 18 1883

ANSWERED

FILE No.

In reply to your favor of Oct. 16th asking about copper rods for Fall River, I am pleased to state that 4,000 lbs of these rods are here to-day and will be sent to the Electric Tube Co. Regular shipments will follow until the entire order is completed. We hope to finish it all within two weeks from to-day.

Trusting this will be satisfactory,

I remain,

Very truly yours,

Sec'y.

W.E. Dodge, Pres.

G.P. Cowles, Treas. & Secy.

AA. Cowles, Secy.

1883-10-22

Ansonia Brass & Copper Co.

No. 19 & 21 Cliff Street

P. O. Box 2375.

New York Oct 22 1883

Mr. Russell,

C/o Edison Elec. Light Co.
65-5 " Ave City

Dear Sir,

A. Floyd of Ansonia
Penn. asks us to send
him 100 lbs each #14 16 & 18
Copper Cable - I'm talking
to you on Saturday, thro'
the telephone, in regard
to this, we understood you
to say that we should send
him 100 lbs of #12 as well,
and to apply the whole
shipment on your order
for the Court St. is this
right? Yours Truly
Ansonia Brass & Copper Co.
Super

W. E. Dodge, Print.

G. P. Cowles, Vice Pres. & Treas.

A. A. Cowles, Secy.

1883-10-24

Ansonia Brass & Copper Co.
Nos 19 & 21 Cliff Street

P.O. Box 2375.

Stenographic Letter

New York, Oct. 24th 1883

Thomas A. Edison Esq.

at 65 Fifth Ave, City.

Dear Sir:

Your favor of this date is
received, with order for rods for Newburgh.

We have sent the order to our factory
and will give it prompt attention. Will
let you know soon when we will have the
rods.

Thanking you for the order,

I remain,

Yours truly,

A. A. Cowles Secy.
G. P. Cowles

W.E. Dodge, Pres.

G.P. Corlies, Vice Pres. & Treas.

1883-10-25

A.A. Corlies, Secy.

Ansonia Brass & Copper Co.
No 19 & 21 Cliff Street

P.O. Box 2275.

New York Oct. 25th 1883

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

The order for Reds for Newburgh we have sent to our Factory and they assure us they will be made promptly. Of course we must finish making the order for Full River first, but that I think will be out of the way this week or early next. When you are ready to execute the documents relative to the Newburgh order please let me know, as they are all prepared ready for signature and I will send them up to you when you are ready.

I would also like to see you some time when you are at liberty.

I remain,

Very truly yours,

Sec'y.

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-10-27

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.
Nos 19 & 21 Cliff Street

P.O. Box 2375

New York Oct. 27th 1883

Thomas A. Edison Esq.

65 Fifth Ave. City.

Dear Sir:

Regarding your order for Newburgh, for rods - we expect to begin to ship early next week, and very likely can complete the order during the week. - This is unusually prompt work, but we happen to be able to do it and take pleasure in pushing it through rapidly.

Regarding tests of electrical wire, which you say does not run high enough in conductivity, - most of our insulated wire furnished you has the Spilldory liquid insulation. It is a coating of shellac upon the wire. This hardens, and very likely makes the apparent diameter of the wire in measuring, greater than it really is; it would be natural therefore for your men, in measuring the wire, to make the apparent measurement greater than the real diameter of the wire, and a test made under such circumstances would of course show less conductivity than the wire really possessed. Therefore, in testing our wire for conductivity, we recommend you to take bare wire, not insulated. We have repeatedly furnished you samples which have tested 90 to 99, and we have had tests made by Prof. Brackett, and Mr. Prescott of Western Union Telegraph Co., running as high as 100 conductivity.

You spoke to me some time since about making a machine by which wire could be tested very readily. You stated you were about making several machines of this kind, and would include one for me. I shall be very glad to have one of these machines, and pay anything you ask for it, if you can furnish it for me. My test of wire has usually been made here in this city, but I am inclined to think I would engage an electrician to make the tests at the factory if I could secure the services of a satisfactory man at a reasonable price. I would like to have a man who is sufficiently versed in chemistry.

W.E. Dodge, Pres.

G.P. Conles, Vice Pres. & Treas.

1883-10-27

A.A. Conles, Secy.

Ansonia Brass & Copper Co
Nos 19 & 21 Cliff Street

P.O. Box 2375

New York Oct. 27th 1883

Enclosed this Letter

(Thos. A. Edison, page 2.)

try to be able to analyze copper which we receive from the
mines. Do you know of any young man competent to fill a

position of this kind, whom we could engage for a reasonable
amount? If so I should consider it a favor if you would in-
form me of such fact.

Very truly yours,

Sec'y.

I suspect - Have Bugman make
for Coles a complete apparatus
for measuring the Conductivity of
the wire

Don't know if this is now will try it and though I

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-11-03.

A.A. Cowles, Secy.

Ansonia Brass & Copper Co
Nos 19 & 21 Cliff Street

P.O. Box 2375

Stenographic Letter

Thomas A. Edison Esq.

65 Fifth Ave, City.

Dear Sir:

I send herewith, sample of a battery which was patented Sept. 11th by Hugh S. Burns. - It is claimed that these batteries possess advantages over others, and that it is a cheap one to manufacture. We are offered the right to manufacture it. I do not know much about batteries, and therefore take the liberty of asking your opinion concerning this one. There is no one whose opinion I should value so highly upon such a subject, and I trust you will do me the favor to examine and test the battery and give me your opinion of it. If you will do this I shall consider it a great favor.

I remain,

Very truly yours,

1883-11-08
A.L. Con'tes SecyNOV 7 1883
ANSWERED

Ansonia Brass & Copper Co.

Ansonia Conn. Nov 6 1883

FILE NO

Mr Thomas A Edison

New York

Dear Sir

We have your despatch as follows 'We must have immediately ~~two~~ hundred rods Electric Copper in straight lengths of twenty feet four inches half inch diameter. Rush it through this to supersede all other orders you may have on hand for as we will arrange with your people here tomorrow reply' I have wired you

"Will send one half inch Copper rods Saturday if all works well possibly on Friday"

This order will take precedence of all others & will have our best attention. The Copper from which it is to be made is now in the bar & it has to be manufactured from the beginning. Will work on it to night & if it is possible to send on Friday we shall be glad. Any way will do our best

Truly Yrs
G.P. Con'tes

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-11-08

A.A. Cowles, Secy.

Ansonia Brass & Copper Co

No. 19 & 21 Cliff Street

P.O. Box 2375

New York Nov. 8th 1883

Samuel Insull Esq.

108 Fifth Ave. City

Dear Sir:

We have filled your Newburgh contract entirely, but the papers have not been signed. If you can appoint some day to execute these documents I shall be obliged to you. I shall be absent on Saturday, but shall return on Monday.

I remain,

Yours truly,

A.A. Cowles Secy.

per Sam. Jamell.

1883-11-10

COPY.

Princeton, Nov. 10th. 1883.

Ansonia Brass & Copper Co.

Dear Sirs:-

I beg to report the result of measurements
of one sample of hard drawn copper wire.

Length 102.44 ft. Diameter 0.0838 in. Resistance, at
60 F., 0.1526 Ohm. Distance of standard (reduced to same
diameter) 0.15104 Ohm. Conductivity, 99 per cent. (98.98)

Yours truly,

(Signed)

C. F. Brackett.

W.E. DODGE, President,
G.P. COWLES, Vice President & Treas.,
A.A. COWLES, Secretary.

WORKS AT ANSONIA, CONN.

1883-11-16

ANSONIA BRASS & COPPER CO.
198 NICHOLS ST.

Telegraphic Letter

New York Nov. 16th 1883

Thomas A. Edison Esq.,

65 Fifth Ave, City.

Mr. Insull:

Dear Sir:

I have received your esteemed favors of this date with order for copper wire for Hazelton, Pa. which will have our prompt attention. I will inform you in a few days when we shall be able to ship the wire.

I have also received your assignment & formal contract for the wire for Mt. Carmel, Pa.

The wire for Tiffin, O. was shipped from here to-day by Great Western Despatch.

Trusting this will be satisfactory, and thanking you for your favors,

I remain,

Very truly yours,

Sec'y.

W.E. Dodge, Pres.

G.P. Cowles, Sec. Treas. & Treas.

1883-11-19

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.

No 49 & 21 Cliff Street

P.O. Box 2375.

New York Nov 19 1883

Mr Thos A Edison Court Dept.
65-5 Ave City

Dear Sir -

Our factory
people say it will take
from 10 to 12 days to finish
your order \$81 -

Trusting this will be
in time for your wants
we are -

Very truly yours -
Ansonia Brass & Copper Co
Smith -

4

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-11-20

A.A. Cowles, Secy.

Ansonia Brass & Copper Co

No 19 & 21 Cliff Street

P.O. Box 2375.

New York Nov 20 1883

Mr T. H. Edison Court Dept
65-5 Ave City

Dear Sir -

We have passed
orders from you in our
work room, and if
this order #407 takes its
regular course it may
be several weeks before
we can ship it - we
will, however, send it
to the Mill and get
them to advise us just
when they can ship -
upon receipt of which
we will advise you
further - Yours Truly
Lester Rogers, Mgr. & Co

B. Dodge
W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-11-21
A.A. Cowles, Secy.

Ansonia Brass & Copper Co
No. 19 & 21 Cliff Street

P.O. Box 2375.

Stenographic Letter

New York Nov. 21st 1883

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

I have heard nothing in regard to the battery which you kindly offered to test for me. As the matter is of some importance will you kindly let me know when we may learn the result of the test? I regret extremely to trouble you in reference to this, but I do not know of any other way of obtaining a reliable test, as it is a matter of which we know nothing.

I remain,

Very truly yours,

Sec'y.

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

Ansonia Brass & Copper Co
No. 19 & 21 Cliff Street

P.O. Box 2375.

Stenographic Letter

New York Nov. 22nd 1883

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

Before you go abroad I would like to have a talk with you concerning business matters. - Please let me know when I can see you, and oblige,

Yours truly,

A.A. Cowles Sec'y
by Benjamin H.

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

1883-11-24

Ansonia Brass & Copper Co.
Nos 19 & 21 Cliff Street

P.O. Box 2375.

Stenographic Letter

New York Nov. 24th 1883

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

I have received your esteemed favors of Nov. 23rd with contract and assignment as stated.

I enclose herewith formal order for wire for Bellefonte, Pa., which please execute and return.

I will arrange to meet you some day next week as suggested.

I remain,

Yours truly,

A. A. Cowles Sec'y.

1883-12-04

ANSONIA BRASS & COPPER CO.

109 21 CHURCH ST.

W. E. DODGE, President.
G. P. CROFT, Vice President & Treasurer.
A. A. CROFT, Secretary.

New York, Dec 11 1883

Dear Sirs:

We have the honor to acknowledge the receipt of your invoice of the 10th inst. for the following items:

100 lbs. Brass	\$14.35
100 lbs. Copper	10.31
100 lbs. Zinc	5.00

in settlement of which we enclose the New York draft for \$30.00, which we have duly cashed for you.

Very respectfully,
Wm. A. Croft
Ansonia Brass & Copper Co.
Ansonia, Conn.

W.E. Dodge, Pres.

G.P. Cowles, Treas. & Secy.

1883-12-05

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.
Nos 19 & 21 Cliff Street

P.O. Box 2375

New York Dec. 5th 1883

Stenographic Letter

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

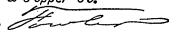
We beg to acknowledge receipt of your several favors of the 4th inst, and have sent you to-day the necessary papers for your signature, for wire to be furnished for the Edison Electric Illuminating Co. for Middletown and Piqua, Ohio.

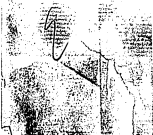
In regard to the wire and bars for armatures and magnets which you are in need of, - we delivered some this morning, and our Factory promises to send shipments of more bars and wire in a very few days. We will do everything in our power to execute your orders promptly, and have written our Factory to-day to use the utmost despatch in filling all your orders, calling their special attention to the orders which you informed us the other day you were in need of.

We remain,

Yours truly,

Ansonia Brass & Copper Co.

per 



1883-12-06

W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

A.A. Cowles, Secy.

Ansonia Brass & Copper Co.

No. 19 & 21 Cliff Street

P.O. Box 2375.

New York, Dec. 6th 1883

Stenographic Letter

Samuel Insull Esq.

65 Fifth Ave, City.

Dear Sir:

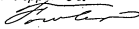
We beg to acknowledge receipt of your favor of the 5th inst enclosing copy of your contract with the Edison Electric Illuminating Co., Middletown, Ohio,

And remain,

Very truly yours,

Ansonia Brass & Copper Co.

per



W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

883-1210
A.A. Cowles, Secy.

Ansonia Brass & Copper Co

No 19 & 21 Cliff Street

P.O. Box 2375.

New York Dec 10 1883

Mr J. H. Eason, Boston Dept
#65-5 New York City
Gleutenum,

Replying to your
favor of the 6th inst we
expect to ship the 1000
lb 336 wire to Houghton
on Friday next -

Yours truly -
Ansonia Brass & Copper Co
J. H. Eason

4 file

W.E. DODGE, President,
G.P. COWLES, Vice President & Treas.,
A.A. COWLES, Secretary.

WORKS AT ANSONIA, CONN.

Stenographic Letter

1883-12-20

ANSONIA BRASS & COPPER CO.
198 NICHOLS ST.

New York Dec. 20th 1883

Thomas A. Edison Esq. - (Construction Dep't.)
65 Fifth Ave, City

Dear Sir:

Your favor of Dec. 18th is at hand, in relation to invoice of Nov. 16th, for No. 10 wire. -

This wire was made wrong through your error in ordering, but it is a small matter and we shall be happy to accommodate you by taking the wire back at price billed if you desire us to do so. - I think this is what we told Mr. Insull.

We suppose you will be willing to pay the freight on the wire both ways.

Trusting this will be satisfactory to you, I remain,

Very truly yours,

Sec'y.

h

Menlo
W.E. Dodge, Pres.

G.P. Cowles, Vice Pres. & Treas.

1883-12-27
A.A. Cowles, Secy.

Ansonia Brass & Copper Co

Nos 19 & 21 Cliff Street

P.O. Box 2375

New York Dec. 27th 1883

Charles L. Clark Esq.

85 Fifth Ave, City.

Dear Sir:

Referring to your favor of Nov. 20th, concerning Mr. Claudius, - I have mentioned the matter to our people, and it will be taken up for consideration after the 1st, or during the month of January some-
time. For the next few weeks we shall be busy in adjusting our annual business and unable to take up any new matters, but I will see that there is no unnecessary de-
lay in your matter.

Yours truly,

Sec'y.

200 West 56th Street.

Wednesday.

Dear Sir

From several hours
I order in at hand &
the order will make out
the usual paper for signature.

Regarding the 27th
of April in this
month, we are, 15th morning
up to 10 P.M. but expect
to begin this work to run
all night. This we do only
for the better accommodation
of our customers as night
work is more easily profitable
to us. Hope you, therefore,
we are doing all that is

(222)

possible. to tell them only
I have written my father
to be very willing to give
him the special attention.
I hope that we can soon
doubly all the way, now that
you need. Please let us know
whenever any particular sign
is wanted before the other

We soon as we can
get a stock of
some immediate wants
to be sure that we
have enough in the office.
I hope to be at the office
on Monday or Tuesday & shall
be glad to see you then.

Yours truly
J. H. Cowles Jr.

Wm. Small Co.
65 N. Main

1883. Electric Light - Armington & Sims (D-83-022)

This folder contains correspondence and other documents relating to Edison's dealings with Armington & Sims, manufacturer of steam engines for Edison central stations. Much of the correspondence is by Pardon Armington, treasurer of the company, and by Gardiner C. Sims, superintendent.

All the documents have been filmed.



HENRY HOWARD, PRESIDENT.
PARSON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT,
C. T. HOWARD, SECRETARY.

WORKS
AT
546 HIGH STREET.

PROVIDENCE, R.I. Jan. 5th 1883

East. Johnson Esq.

Dear Sir
I have been called a few days
away and made arrangements to take your
fourth Central Station engine. He requires
some changes viz: one 60" pulley one 51 1/2"
pulley and longer crank shaft. We have
ordered a new shaft from Chester Pa.
and before these changes can be completed
we shall have another engine as far
advanced as your fourth, which will be
finished and shipped to you about Jan.
13th if you desire. What do you say?
Gov. Littlefield of this State is engaged
in various manufacturing interests and is
interested in the Edison Electric Light. He
often visits New York and would like
to visit the Central Station. I promised to
ask Mr. Edison to send him a pass.
Please attend to it and oblige
Sincerely Yours
Sims

Two 8 1/2 x 10 engines for Antwerp are
finished. We are boxing them, and
will ship from here by Steamer next
Monday night. Tell J. J. I have
full shipping directions. S.

32

Done 5-83
Schwan



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARSON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

Wm. H. Howard
Providence R. I. Jan'y 8. '83
Thomas A. Edison Esq.

New York

Dear Sir,

20
11
The enclosed invoice
of 2 8² x 10 Engines for Antwerp - the Bks
we have sent to Hayward, Perry & Franchlyne
54 Wall St. - I understood from Mr. Inoull
that there could be paid for immediately on
shipment. Please send check

Yours truly

Parson Armingtton
J. Treasurer.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

Providence R. I. Jan 11. 83

Mr Thomas Addison
New York Dear Sir

23
33
I write that the next 14th x 13 is to go
to Italy. Please send shipping directions

Yours truly,
Pardon Armington
Treasurer



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
RANDOLPH ARMINGTON, TREASURER.
O. C. SIMS, SUPERINTENDENT.
A. T. HOWARD, SECRETARY.

Answered 1/15

Providence R. I. Jan 11. 83

*Thomas A Edison, Esq
New York*

*Dear Sir, We have another
No 13 ready to ship. When shall we send
it? - If for the Central Station it will have
the crooked Schenck pipe, if not, we presume
that it will be the original straight one.*

*Yrs truly,
Randolph Armington
J. T. Francis.*

1883-01-15



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. G. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

Providence R. I. Jan 15 83

Dear Sam I have just written Mr. Davis
that I want that certificate or testimonial
of our engine. Now please "punch him up"
I have him write a good one, giving
his experience with engine, something
enough of detail to amount to something.

Yrs truly

Pardon Armington
Jr.



WORKS
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

London N. E. July 23 '83. -

Mr A. Edison, Esq

My dear Sir,

Prisoners the 14th & 13 for
London we have two ready to ship. Shall
these go to Central station? - if so we will
fit the crooked exhaust. They are in our
way and we would like to ship them somewhere.

Please advise us

Yours truly

Pardon Armington
J. C. Treasurer. -

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or omissions in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, but in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

1238
NORVIN GREEN, President

NUMBER	BY	RECD BY	CHARGE
310	W	W	23 paid

Received at 791 BROADWAY,

Wade Providence R.I. 26 Jan 26 1882.

So Insull 65 Fifth Ave.

Patterns go tomorrow drawings
None next week can give you three eight and
half February fifteenth or three
and one half twenty first.

Ammon D. Sims

This telegram has just been received at the office in 701 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRE.

62

Jan 26. 53

Armington Mine

1883

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted to by the sender of the following message. Errors can be rectified only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

TIMOS, T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
46	Am	do	12 paid
Received at 791 BROADWAY,			Jan 27 1882.
Wm. J. Ensell.			
65 Fifth Ave.			
Can ship Eight and one			
half by air for London			
Wednesday Night			
Amington & Sons			

This telegram has just been received at the office in 791 BROADWAY, near Ninth Street, where any reply should be sent.

DIRECT WIRES.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

Called
20
21
Mr. R. L. Janney 29th 83
Thomas A. Edison, Esq.

My dear Mr. Edison,

Dear Sir, Your favor of 25th
reaching (No 132) 3 8" x 10 Engines for
London is rec'd this am - one of them will
be shipped Wednesday the 31st

We are not yet advised when to
ship the 3 14" x 13 Engines now down -
they are in our way

Yours truly

Pardon Armington
Treasurer.



WORKS
AT
548 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

Midweek R. L. Jan 30th 83

Thomas A Edison Esq

My dear Sir,

23
22
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14
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12
11
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0
Your letter
concerning shipping prices for 4 - 8² x 10 for London
and 2 14² x 13 for Milan recd.

We are also in recd of your referring
to letter from Mr Gailing in relation to royalty
on Engine for France & Germany. I think
that nothing can be done to settle this
business until I go over, which will be
about March 1st The matter can be settled
more satisfactorily than to all parties

Yours truly,

Pardon Armington

J. T. Howard



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SMAS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

Providence R. I. Jan'y 30, '83

Thomas A. Edison, Esq

New York

Dear Sir, I enclose Bk of
Patterns sent to you on Dec for 14th 13
also invoice for same. I shall be pleased
to receive your check for same for use in
Feb. 3rd for pay day

Yours truly

Pardon Armington
Treasurer



WORKS
546 HIGH STREET.

HENRY FORD, TREASURER.
PARDON ARMINGTON, MANAGER.
G. B. BINS, SUPERINTENDENT.
J. T. HOWARD, SECRETARY.

1893 02-05

Fr. Feb. 5. 93

My Dear Sir,

to have used the expression "no grit in this
gizzard"? Well what I want to say is, some
people are more so than others, and are all the
time expecting to go to the demintion, how wows at the press
hour: - The governor is now in M. and writes me as
follows: - "I have just heard of an incident which may
not be of any great importance, but yet is significant as
showing us a friend of mine was driving with several
gentlemen, one of whom was Whitelaw Reid - Mr Reid was
asked if it was true that the late Henry Draper had left an
important electrical invention nearly completed; he said yes,
and that Mr Draper had been able to place it before
electricians so that they could go on and complete it. He
said further it was in the direction of regulating the electric
current so that its continuity and regularity did not depend
upon the motive power. - Now how is that? had I better shut up
shop and discharge my men? - My impression is that you have
been working in this direction and I would like you to write
me what effect if any, this would have on the motor question,
if it was accomplished - But it is simpler to let the motor do
the regulating and so discuss traps? - Write me about it, as
I want to be ready to "brace up" the governor on his return.

Yours Truly
Pardon Armington

Thomas Edison Esq
NY

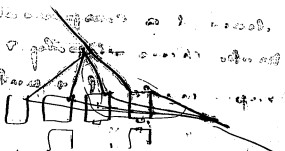
4

Mr Reid is mistaken - Prof
 Draper desired to give
 a dinner to the Ann Academy
 of Sciences & wanted to use com-
 lights but his gas engine was
 so very unsteady that the light
 flickered - While experimenting
 I devised a compensator to
 make them steady & Prof
 Draper made it & put it on his
 engine & it was a great
 success the light being
 steady - W Reid was at the
 dinner -

Edison

[ATTACHMENT]

12
Feb 583
Commence



Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or omissions in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, not in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
257	MX	SPD	3/2

Received at 791 BROADWAY.

Feb 6 1888?

Dated Providence R.I. 6
 To Saml insult
 65 + Dave
 Drawings all done go through
 Armington & Sons

This telegram has just been received at the office in 701 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRES.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

1883-02-06

Providence R. I. Feb 6, 83

Thomas A Edison Esq

New York

Dear Sir,

We send by ex.

the rights the drawings to you for

Patent for the 14th & 13th. Please send

them forward the quickest way.

Yours truly

Pardon Armington
Treasurer.



WORKS
AT
548 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

1883-02-06.

Providence R. I. Feb 6. 83

Thomas A Edison Esq

New York

Dear Sir

My friend

today on 14th & 13 for lamp & have
sent Bk to H. P. 7

54 Wall St

N.Y.

Yours truly

Pardon Armington

J. T. Tinsley



WORKS
AT
546, HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARSON ARMINSTON, TREASURER.
G. C. SING, SUPERINTENDENT.
G. T. HOWARD, SECRETARY.

1883-02-12.

Birmingham Feb. 8 '83

Samuel Ingham, Esq.

Mumuk

Dear Sir

Engines run for an 8² x 10 for London sent —

on 14² x 13, sent — and on 14² x 13 for London

which will go tomorrow. There were changed you

in any case as they have been some time done
subject to your order — the boxing has been delayed

on the last one. We have shipped the 14² x 13

for London (chgd to Probated L.C.) and some
days ago notified you that we had another
14² x 13 done and requested shipping directions.

Jan 30th you wrote us that you would let us
know in a day or two — we have not yet
rec'd order. This engine has not yet been
billed.

Yours truly

Parson Arminston
J. T. Howard



WORKS
AT
545 'HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

1883-02-09

Providence R. I. Feb. 9. 83

Thomas A. Edison Esq

New York

Sir

The second engine for
Anoa was shipped today & bill has
been sent to H. P. Frenchlyn. The bill
has been already sent you

Yours truly

Pardon Armington
Jr. Treasurer.

1883-02-09



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

Providence R. I. Feb 9. 83

Good Morn'g, Sir

Dear Sir,

I leave for Europe
in a few days, and must get the business in
as good shape as possible - to do this I
must have from you a check for the
2 - 14th & 13. 1 - 8th & 10 & Patton and
drawings amtg to \$575. I shall be
in N.Y. on Tuesday morning and you
must have this for me at that time.

Yours truly

Pardon Armington
J. "Trasun."

1883-02-12.



HENRY HOWARD, President,
PARSON ARMINGTON, Treasurer.

G. C. SIMS, Superintendent,
C. H. HOWARD, Secretary.

WORKS
146 HIGH STREET

PROVIDENCE, R. I., Feb. 12th. 1883

Thomas A. Edison Esq.

Dear Sir

We send you to day by express to
65 Fifth Av. two boxes. One contains
a full set of Wilkinson oil cups,
crank and cross head pin, nipples.
The other, a cylinder oil cups. They
are for the Paris engine, and must
be forwarded at once. They will get
an idea of how our engines should
be lubricated and then make the
articles or we can furnish them.

Respectfully Yours

G. C. Sims Supt.

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of telegraphed messages, beyond the amount of tolls paid thereon, and in any case where the date is not pronounced in writing within sixty days after sending the message.

This is a VERIFIED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

MORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHARGE
248	Nu W	Re paid	24

Received at **791 BROADWAY.** Feb 17 1880

Dated Providence R.I. 17
 To Samuel Russell
 65 Fifth Ave
 Three engines go next week
 on Monday the other two
 last of the week
 Arrington + Jones

This telegram has just been received at the office in 791 BROADWAY, near Tenth Street, of which reply should be sent.

DIRECT WIRE.

1883-02-19



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT.
C. T. HOWARD, SECRETARY.

Prov. Feb 19 83

Dear friend

I hope that you will have lots
of money for me on Wed. morning. — If you
find it utterly impossible to give me the
cash for the 2 Benson Engines then leave
for me a 3 mrs note with interest added
for the amt. I shall be very busy on
Wed. morning & hope that you will have
be all ready for me so that 10 minutes
will fix it up.

Yrs. H. L.



WORKS
516 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
G. C. SIMS, SUPERINTENDENT,
C. T. HOWARD, SECRETARY.

1883-02-28

PROVIDENCE, R. I., Feb. 28 1883

Saml. Insull Esq.

65 Fifth Av. N.Y.

Dear Sir:

We send you by express five
photograph albums for Mr. Eaton's office

" Mr. Clarke "

" " Edison "

" Edison Co. London "

" " Chicago "

Yrs truly

The Armington & Sims Co.

P. S. &



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

1883-03-03

PROVIDENCE, R. I. *March 3d* 1883

Thomas A. Edison Esq.

Dear Sir

*Your check for \$4750 in payment for
English engines received. Awaiting our check.
I enclose find receipted bill.*

*8 1/2 x 10 engine
for Gouk St. was shipped yesterday.
When shall we send the 14 1/2 x 13 engines?
They will soon be ready to ship.*

Respectfully Yours

G. C. Sims Supt.

1883-03-05



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

PROVIDENCE, R. I., *March 5th* 1883

Thomas A. Edison Esq.

Dear Sir

Your letter received. We give you shipping weights of our engines delivered f.o.b. here

6 1/2 x 8	2100 lbs.	14 1/2 x 13 without Pulley	8,500 lbs.
8 1/2 x 10	3450 "	12 1/2 x 20	12,000 "
9 1/2 x 12	4500 "	14 1/2 x 24	18,000 "
13 x 13	9500 "	16 1/2 x 24	21,000 "
14 1/2 x 13	10,000	18 1/2 x 30	32,000 "

Shipping to foreign ports requires strong boxing and we can only give you the weights and No. of cars sent to Baltimore S. A. Indication rigging for each engine will cost ten dollars.

Respectfully Yours

G. C. Sims Supt.

1883-03-15



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

PROVIDENCE, R. I., *March 15th 1883*

Thomas A. Edison Esq.

Dear Sir

As we are making some changes in our shop it will be necessary to ship as soon as possible one 14 1/2 x 13 Central Station which was finished two weeks ago. If it is for foreign shipment we must test and box it here as well as put in standard exhaust pipe. If for Central Station we will send special exhaust pipe. We have two other engines nearly finished which completes the order.

Respectfully Yours

G. C. Sims Subt-

Wm

1883-03-25



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

PROVIDENCE, R. I., March 25 1883.

Dear Sam.

Inclosed find check for
Twenty dollars in payment for engravings
which are very fine.

I find that pair of
14 1/2 x 13 with two pulleys for Spencer Borden
Romantic Mills Dexter Mass. was \$1850
Your Borden engines will be the same.
We will however have to make a few
additions to these two engines which Mr.
Borden did not have.

Sam. by and send
me \$750 for 8 1/2 x 10 engine now at Bank St.
this week. Have not heard any thing about
your letter to Alice as I have not yet
called

Sincerely Yours
Sims

1883-03-27



WORKS
516 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

PROVIDENCE, R. I., March 27th. 1883

Dear Sam.

Inclosed find copy of letter just received from Mr. Armington. Show it to Mr. Edison also Mr. Clarke. In a previous letter Mr. Armington says. "I got a letter from Isaac in which he promised to write me again about fins for me to name here as he had killed the English engine at our advance." Now Sam. how come style about you and write him d. q. Please send me two admission cards to Central Station and oblige

Sincerely Yours
Sims

While writing your letter has arrived. I shall be glad to receive your picture although you are a down liar about writing that letter. As I have not said a word about it I am all right. Mrs. A. will be glad to have you come on for Sunday any time you care and will expect you to stay at their house. When will you come?

1893-03-13

Lestry

London, E.C. March. 13. 1893

Dear Sirs

I arrived, in London on Monday night, and Tuesday went over to this office (74 Coleman St.) and met Mr White. - found that Johnson was in Paris to be gone probably all of the week - since then I have been taking bearings and looking over the different metallations. There is no doubt but that we are now ahead of any thing in the engine line, but still they have been taken in, so by the whole electric light business, that we must not expect to "bore" the thing at once beyond the clouds, but it is beyond question that with care and time we can make a very good thing out of it.

Our engine at Waterloo Station is gaining friends every day - they have been making some tests with it, and find with a full load they can let the steam fall 25 lbs. without affecting the speed - as this man told me who conducted the tests, they were just astonished, and said there

sent an engine in England that will do it" - he was an engineer by the way. Johnson has returned from Paris and has confided to me some of his plans, and at the proper time will arrange a meeting with Capt. Shaw, Duke of Sutherland and the right people to explain the engine over.

I am expecting a telegram daily to go to Paris, where I can get the bearings there from what I learn I shall expect to find castings out for the 14th / 13. Johnson has woke them up over here and from what I learn Edison is surely taking the lead in all Europe. They are to put in installations in the House of Commons and objected to having the engine immediately under the library - To locate them outside would have increased the cost very much. Mr White took the chairman of the Committee over to Walston station and, after seeing our engine work, said, he had not thought it possible to have an engine run so silently, and there would be no objection to putting in an engine like that - This was very gratifying to the Edison Co and of course is another vote for me.

From Paris I may freely

go into Germany before I return here. Please
 read this to the Germans with my regards as
 it would be useless for me to write him about
 the same thing. It has been awful weather ever
 since I landed, snowed, hailed and been the most
 dreary time I can remember. - I am well.

Yours truly
 Gordon Armstrong.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

1883-04-01

PROVIDENCE, R. I. April 1st 1883

Samuel Ingersoll Esq.

Dear Sir

Your letter of March 26th, 29th, & 30th. received. I have ordered three crank shafts for $14\frac{1}{2} \times 13$ Bankton engines, and the regulators are commenced. Please send me size of pulleys and speed of engines as soon as possible so that I can push the work to a good advantage. The price \$1850 will include pulleys and extra oil cups as much as all labor in attaching shaft iron cases. There we will have to hire macle and oil change what we pay for them. We have just completed four indicator attachments and find that they cannot be furnished less than \$15.00 each.

Crank pin bars for $8\frac{1}{2} \times 10$ will cost \$8.00 7 or $14\frac{1}{2} \times 13$ \$9.50

I thank you for your kindness in sending Mr. Huntington before giving account of our of Central Station Engine

1883-04-01



WORKS
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

PROVIDENCE, R. I., 188.

It was unfortunate that the efforts of Mr. Edison in producing a combination of dynamo and engine that has driven all competition out of the market, should be lost sight of, to bring forward an oil engine to lubricate "the crank pin of the balance wheel". The report has appeared correctly in the Boston papers and Rev. Harvards will have articles in the Providence papers. I have also made arrangements to have Philadelphia papers notice it.

Your new departure with the $8\frac{1}{2} \times 10$ will require new patterns, and the ^{extra} cost shall be just what it costs us say about \$25.00 for each engine. Are you to increase speed & pressure? Think this over twice before deciding. I have the engines nearly finished and if you will decide that pulleys will go at them. It will take two weeks to make the change.

Yours Truly

G. C. Sims Subtan

1883-04-02

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been recited to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for confirmation, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount paid for the same, nor in any case where the claim is not presented in writing within six days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
364	W	W	paid

Received at 791 BROADWAY, *apl 2 1882.*

Dated *Providence R.I.*

To *Thomas A. Edison 65 Fifth Ave*

Will receive large order for
Electric Light Engine from Boston
tomorrow morning by mail telegraph
Immediately pay order you may
have *GC Smls*

This telegram has just been received at the office in 791 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRES.


HENRY HOWARD, President,
FARSON ARMINGTON, Treasurer,
G. C. SIMS, Superintendent,
C. T. HOWARD, Secretary.

WORKS
546 HIGH STREET.

ARMINGTON & SIMS Co.,

PROVIDENCE, R. I., U. S. A.

1883-04-17

PROVIDENCE, R. I., April 17th 1883

Dear Sam.

Gov. Howard wrote Mr. Edison this morning and will to night be at 5th Ave. Hotel. He desires me to telegraph him the answer of Mr. Edison and the amount of stock he wants. The owners are as follows P. Armington \$22500 G. C. Sims \$22500 H. Howard \$15,000. A. D. Lukinwood & Co. \$10,000. These stockholders own \$5,000 each and the balance of \$100,000 is divided in small sums among friends of Mr. Brewster. Gov. H. has no interest in them and they have never been to our meetings. From this you can form some idea of how you would like to sell your stock and the amount you want as Gov. H. thinks others than ourselves will part with some of their stock. I will write Mr. Armington to night, also immediately on receipt of your letter stating the same fully, and asking for his consent to let Mr. Armington sell part of his stock. I have the utmost confidence in Gov. Howard and he was as willing as I was to quit the jaws of Mr. Edison

You are to understand that this stock is to be
sold at its par value in this case and no advance
is asked for. We have got to have more
capital as our business is increasing and more
stock will be issued in proportion to the
amount each person holds.

Sincerely Yours
Sims

Thursday morning I go to New London and
Hartford. Will be here again on Friday

33
Apr 17. 83

1883-04-17.

P. O. BOX 184.

Providence Telephone Co.

(LICENSED BY THE AMERICAN BELL TELEPHONE CO.)

HENRY HOWARD, Pres.
H. C. CRANSTON, Vice-Pres.
CHARLES F. HOWARD, Secy and Treas.
W. D. BERRY, Cash.

ROOMS 24 AND 27 BUTLER EXCHANGE,

Providence, R. I., APRIL 17TH, 1883

THOMAS A. EDISON, ESQ.,

DEAR SIR:-

MR. SIMS, WHO IS NOW SITTING BY MY SIDE, HAS RELATED SOME OF THE CONVERSATION WHICH HE HAD WITH YOU IN NEW YORK A FEW DAYS SINCE IN REGARD TO YOUR HAVING AN INTEREST IN THE ENGINE BUSINESS. CONFIDENTIALLY, THE FACTS ARE THESE: WE ARE ABOUT ENLARGING OUR CAPITAL, TO WHAT WE THINK MORE NEARLY COMPORTS WITH THE ACTUAL VALUE OF OUR FRANCHISES AND PROPERTY, - TO WIT, FIVE HUNDRED THOUSAND DOLLARS. I DO NOT MEAN TO SAY THAT THE VALUE IS FULLY FIVE HUNDRED THOUSAND DOLLARS, BUT CERTAINLY THREE HUNDRED. NONE OF US WOULD SELL ANY OF OUR STOCK ANY LESS THAN AT THE RATE OF THREE HUNDRED THOUSAND DOLLARS. BUT SO FAR AS YOU ARE CONCERNED, THE CASE IS ENTIRELY DIFFERENT. THE RELATIONSHIP BETWEEN US IS SOMETHING MORE THAN A PECUNIARY ONE. YOU HAVE, AS WE ALL FEEL, TREATED US FAIRLY AND HANDSOMELY. WE HAVE ENDEAVORED TO TREAT YOU IN THE SAME WAY. YOUR CONNECTION IN EVERY RESPECT IS A PLEASANT ONE. I CANNOT SPEAK OF COURSE FOR ANYBODY BUT MR. SIMS AND MYSELF; BUT, SO FAR AS WE ARE CONCERNED, WE WOULD BE IN FAVOR OF EACH ONE OF US CONTRIBUTING A PORTION OF OUR STOCK TO MAKE UP AN AMOUNT FOR YOU AT THE ORIGINAL PRICE, TO WIT- ONE HUNDRED THOUSAND DOLLARS. OF COURSE WE DO NOT MEAN BY THIS THAT AN OFFER OF THAT KIND SHOULD BE EXTENDED TO OTHERS, AS ALL OF US WOULD

RATHER BUY THAN SELL AT THE RATE OF THREE HUNDRED THOUSAND. IF YOU
 WOULD MAKE UP YOUR MIND HOW MUCH YOU WOULD LIKE TO HAVE FOR YOURSELF PER-
 SONALLY, AND WOULD WRITE MR. SIMS ABOUT IT, WE WILL SEE WHAT WE CAN DO.

3 1594-1595

Wm. J. Howard

- 2513 2420

WIT - ONE HUNDRED THOUSAND DOLLARS. ON BEING ASKED BY THE TAX
TIN ON OUR ACTION TO HAVE US REVERTED FOR YOU AT THE ORIGINAL PRICE, TO
BE CONSIDERED, WE WOULD BE IN FAVOR OF OUR OWN OF US CONTRIBUTING A POR-
TION OF OUR OWN FOR A VERY LONG TIME. BUT, TO SAY AS WE
WANT. YOUR CONTRIBUTION IN EVERY RESPECT IS A PLEASANT ONE. I WOULD
US FULLY AND HAPPOUNLY. WE HAVE ENJOYED TO WHAT ARE IN THE CASE
BOUNTING MORE THAN A CENTURY ONE. YOU HAVE AS ALL THE, TREATED
OWNED, THE CASE IS FULLY DIFFERENT. THE DIFFERENCE BETWEEN US IS
THE RATE OF THREE HUNDRED THOUSAND DOLLARS. BUT TO SAY AS YOU ARE CON-
TAINING HUNDRED. SOME OF US WOULD LIKE TO SEE YOU AND THE OTHER
AND THAT YOU HAVE IN THE LAST TWO YEARS, BUT NOT FULLY
AND PROPERTY, TO SAY, FIVE HUNDRED THOUSAND DOLLARS. I DO NOT WANT TO
WE DO THINK MORE NEARLY COMPARED WITH THE ACTUAL VALUE OF OUR FORTNIGHTS
DOLLARS, THE FACTS ARE THERE; WE ARE ABOUT FORTY FIVE DOLLARS, TO
IN REGARD TO YOUR HAVING AN INTEREST IN THE OTHER BUSINESS. CONTI-
TATION OF THE CONTRIBUTION WHICH HE HAD WITH YOU IN NEW YORK A FEW DAYS
- 25 -

ARMINGTON & SIMS Co.,

PROVIDENCE, R. I., U. S. A.

HENRY HOWARD, President.
 PARDON ARMINGTON, Treasurer.
 G. C. SIMS, Secretary.
 G. T. HOWARD, Secretary.

WORK
 AT
 546 HIGH STREET.

PROVIDENCE, R. I. April 27 1883

Dear Sam.

I am very sorry to hear that you have been sick and wish you could come down here for a few days. It will do you good. Mr. Moore says Mr. Batschelder is expected in a few days. Bring him down if you can. Mrs. Armington sends kind invitation. She is very anxious to hear of Mr. A. though Mr. Batschelder. Same if he cannot come I will go to N. Y. to see him. Think this in mind and let me know. I thank you for the order of six 14/2x13 engines and will push them along. Mr. Edison ordered 10 — 8 1/2x10 engines. I will have the 4 1/2x13 pushed down in a few days. Please send me check for \$750 for 8 1/2x10. That went to Gouck St. I am terribly hard pushed for money. Sincerely Yours Sam

1883-05-05

ARMINGTON & SIMS Co.,

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

PROVIDENCE, R. I., U. S. A.

WORKS
AT
516 HIGH STREET.

PROVIDENCE, R. I., May 5th. 1883.

Thomas A. Edison Esq.

Dear Sir

Your letter of yesterday received. also one from Mr. Armington. He says. "I presume that you got a cable on Saturday for two 9 $\frac{1}{2}$ x 12 275 H.P. - from London. It is very desirable to have these engines shipped at once." We have only two finished engines on hand and they are ordered. Every thing is sold as soon as finished. If you think you will want these engines. we will finish two immediately and hold them. Your 10 8 $\frac{1}{2}$ x 10 engines are under way. We can commence to ship them about May 14th.

Respectfully Yours

G. C. Sims Supt.

Coby

1883-05-22

Santiago Chile May 22, 1883
The Amington Firm Inc.
Providence R.I.

Gentlemen;

I reply to your inquiry regarding the engine sent me. I beg leave to say that we now have three at our Central Station in this city - one 8210 and two 13x13. The make makes the disadvantage of having to run long steam pipes, while the space available in our engine room necessitates using short belts.

The engine give perfect satisfaction in spite of their drawbacks, and a higher economy in coal consumption is reached than we had dared to expect. The government is perfectly quiet & satisfaction of local and we are satisfied that your engine was everything to be desired.

Yours truly,
H. A. Skinner

Supt Edison Electric Light Co.

1883-05-24

ARMINGTON & SIMS CO.,

HENRY HOWARD, President.
 PARDON ARMINGTON, Treasurer.
 G. C. SIMS, Superintendent.
 C. T. HOWARD, Secretary.

WORKS
 AT
 516 HIGH STREET

PROVIDENCE, R. I., U. S.

RECEIVED
 MAY 25 1883
 ANSWERED

FILE No.

PROVIDENCE, R. I. May 24th. 1883

8/22
 Samuel L. Edge.

Dear Sir

Your letter received. We have not one finished engine on hand having shipped eight this month and are far behind our orders. We can ship you $9\frac{1}{2} \times 12$ at any time next week. To change regulation pulley will require a new pattern. What size do you want? Mr. Moore had an extra pulley made for $9\frac{1}{2} \times 12$ engine Baltimore Sun. If this will answer we will gladly change pattern and make pulley without any additional expense to you.

Mr. Moore has patterns of foundation caps for engine. Please send me drawings, and weights of caps size and what you require and I will give you cost at once.

Sincerely Yours
 Sims

1883-05-31

ARMINGTON & SIMS Co.,

PROVIDENCE, R. I., U. S. A.

HENRY HOWARD, PRESIDENT,
PARSON ARMINGTON, TREASURER,
G. C. SIMS, SUPERVISOR,
C. T. HOWARD, SECRETARY.

WORKS

AT

546 HIGH STREET.

PROVIDENCE, R. I. May 31st 1883

Dear Sam.

Your letter received
I will call Saturday morning and
talk over our business with you.
Make a note of your many
questions. and I will give you
an account of our work in progress.
I thank you for your kind
invitation but will no doubt go
Ruelle to visit Mr. & Mrs. Moore.

Sincerely Yours
Sims

No. 17-Form 2. **THE AMERICAN RAPID TELEGRAPH COMPANY:**

1883-06-06 19

General Office, 187 Broadway, N. Y.

This Company TRANSMITS and DELIVERS messages only on conditions, limiting its liability, which have been accepted by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors in delivery or transmission or delivery of Unrepeated Messages.

This message is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions named above.

PHED. H. HAY, Gen'l Mgr.

T. A. SHERMAN, Gen'l Supt.

J. W. CONVERSE, President.

CHECK.	NUMBER.	TIME.
23 Oct	37 July	210
From Providence R.I. to June 5, 1883		
To C. A. Edison		
65-5 Ave		
Since has reported your last interview your representative in France has definite & clear right to build engines on ten per cent royalty		
H. H. Howard		

Read the Notice at the Top.

Please pay no charge on this message, unless the account is directed herein by the Company's Stamp.



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883. 06. 05



PROVIDENCE, R. I., June 5th. 1883.
2.20 P.M.

Dear Sam

Your dispatch just received. Engine is finished, and will leave here tomorrow in Philadelphia steamer, thence by Penn. R.R. to Sunbury. I will send bill of lading to you we have just heard from Mr. Armington. No doubt he is hard at work and his progress is very slow as we expected it would be. He mentions Mr. Bailey, who seems to be a serious obstruction to his progress. I have written Mr. Armington to talk more and come to some conclusion if he can. I have related to Gov. Howard my conversation with Mr. Edison concerning the building of our engines by Mr. Batchelder at Paris. We agree to the suggestion of Mr. Edison and that is that Mr. Batchelder shall go on and build as many engines as he chooses pending negotiations of our patents in France. Mr. B. shall receive for us the amount of royalty, as proposed by Mr. Edison for each

privileges.

Sincerely Yours

Siems

You are to understand that Mr. Batchelder shall finish all engines he may have commenced under this agreement.

43.
June 5th 1883
H. C. Siems
New Building Engines
in France

OK
Send Copy to Batchelder



HENRY HOWARD, President.
PARDON ARMSTRONG, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-06-06

JUN 7 1883
ANSWERED

FILE NO.

Copy 12

PROVIDENCE, R.I. June 6th, 1883

Thomas A. Edison

Your telegram received.
We have finished one $6\frac{1}{2} \times 8$, two $8\frac{1}{2} \times 10$, two
 $9\frac{1}{2} \times 12$. Nearly finished seven $8\frac{1}{2} \times 10$, eight
 $9\frac{1}{2} \times 12$, one $14\frac{1}{2} \times 13$ 66" pulleys. We have
one $14\frac{1}{2} \times 13$ Central Station Engine that we have
finished in one week. We have four 13×13
half finished. We have orders for five $6\frac{1}{2} \times 8$
five $8\frac{1}{2} \times 10$ two $9\frac{1}{2} \times 12$ but no time is
given for delivery. This order will not interfere
with any you may give us.

Please send
to office of Mr. Morse for list heading for
 $9\frac{1}{2} \times 12$ engine sent to Sunbury Pa. to day.
Respectfully Yours,

G. C. Sims Supt.

ARMINGTON & SIMS Co.,

1883

PROVIDENCE, R. I., U.S.A.

HENRY HOWARD, President,
PARDON ARMINGTON, Treasurer,
G. C. SIMS, Superintendent,
C. T. HOWARD, Secretary.

WORKS
AT
545 HIGH STREET.

PROVIDENCE, R. I. June 9 1883

Dear Sam.

I find that it will be impossible to get the engine for your Central Station I mentioned. His salary has been increased to \$2000 per year and the Co. that employs him are not willing to let him go.

You are on damn lie about that check Sam. and you know it. When can you come on and spend Sunday

Sincerely Yours
Sims

ARMINGTON & SIMS Co.,

1883-06-12

PROVIDENCE, R. I., U.S.A.

HENRY HOWARD, President,
PARDON ARMINGTON, Treasurer,
G. C. SIMS, Superintendent,
C. T. HOWARD, Secretary.

WORKS
AT
545 HIGH STREET.

PROVIDENCE, R. I. June 12 1883

5.30 P.M.

Dear Sam

Just received your telegram concerning shipment of order No. 17. We have an engine ready to ship. Altho will follow soon. You will not be delayed by us.

Sincerely Yours
Sims



WORKS
AT
546 HIGH STREET.

PAID UP AND PAID UP
GARDINER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

PROVIDENCE, R. I. June 11th 1883.

Thomas A. Edison Esq.

Dear Sir

The blue prints we send you to day
are for Mr. Batchelder. They show the
changes we have made in $14\frac{1}{2} \times 13$ "
engine with 6" shaft new regulator, and
6" pulleys. Please forward them at
once and oblige

Respectfully Yours

G. C. Sims Supt.

All $14\frac{1}{2} \times 13$ engines that we have made
have been planned on the bottom. Will
it be necessary to plane them out for
Central Station? Please answer by
wire as we are working on your
order of twelve

G. C. S.



1200 - HOWARD, Providence.
Under Supervision of the Board of
Directors of the Board of Directors

June 12th, 1893

Gardner C. Sims, Supt.

Providence, R. I.

Dear Sir:-

Referring to your favor of the 11th. inst., I beg to
state that it will be unnecessary to place the bottoms of the
14 ¹ 2 x 18 engines that you are now building.

Very truly yours,

June 1st, 1883

1883-06-13



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
GARDNER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

PROVIDENCE, R. I. June 13th. 1883

Thomas A. Edison Esq.

Dear Sir
Enclosed find bill and bill of lading for engine No. 18 shipped this day. Engine has driving pulley 48" diameter. 12 1/2 fpm and runs 350 revolutions per minute. An account of increased weight and time to finish pulley we thought an extra charge would be necessary. You will see by our bill that no extra charge has been made and will furnish you ten engines at regular price of \$750 each.

After consideration we have concluded to plane bottoms of all 14 1/2 x 13 engines. You will be better pleased with them.

Respectfully Yours

G. C. Sims Esq.

We will ship next engines June 16th & 20th.



June 14th, 1903

G. C. Sims, Esq.

Providence, R. I.

Dear Sir:-

I am in receipt of yours of the 13th, covering bill of lading for engines shipped to Shamokin. Please hurry forward the other two engines as quickly as possible as our Company there are waiting for them.

Very truly yours,

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
296	TX	W. J. Fair	402

Received at 852 B' BROADWAY

Date Providence R.I. 15 June 15 1885

To Charles A. Edison

65 Fifth Ave my

Engine for Pharkokin one

tomorrow one Tuesday

Arrington & Sons

This telegram has just been received at the office in 701 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRES.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-06-22

PROVIDENCE, R. I., *June 22*, 188*3*

Saml Deneil.
New York

Dear Sir:

Our friend,
Concerning lubrication for *Santbury*
Engine, we are very positive one was sent,
as we send a full set of oil cups and
wrenches with every engine, besides the
Cylinder oil cup is forced in a separate
lot and we hardly see where we could
make such a mistake, however we send
another by Ex this morning if the other is
found defective return. The engines
for Shamokin were supplied with
oil cups.

Very truly yours
Armington & Sims Co.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883. 06 - 23.

PROVIDENCE, R. I., June 23rd. 1883.

Thomas A. Edison Esq.

Dear Sir
Enclosed find bill for $8\frac{1}{2} \times 10$ engine sent to Shamokin Pa. also bill for extra connecting rod bars sent with same engine. We have the remainder of your order for ten engines nearly completed and would like shipping directions. Pulleys are 48" diam. $12\frac{1}{2}$ " face. Your Supt. at Sunbury is mistaken about automatic oil cup or lubricator. Please have the cup one sent you returned to us as it is worth \$15.00. We certainly sent the cup from here, as it is the only article belonging to the engine that requires a box of any size. If it had not been sent no box would have been required. Please investigate this matter and oblige

Respectfully Yours
R. C. Sims Supt.



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-06-27

PROVIDENCE, R. I., June 27 1883

Dear Sam.

Your letter from Montreal received. Mr. Edison has written for blue prints of $8\frac{1}{2}$, $9\frac{1}{2}$ & $14\frac{1}{2} \times 13$. I will do my best, and send them as soon as I can. I sent $6\frac{1}{2} \times 8$ patterns to England to day and will send $8\frac{1}{2}$ and $9\frac{1}{2}$ next week. I have got to make two full sets and send to Armington. Do have our patents in Austria we have got to build, and have an engine running very soon. I will be in N.Y. Monday to see you and would have been Saturday night if I could see you for a short time Sunday. I would like to meet Mr. Edison if possible. Let me know if I can meet you.

Sincerely Yours
Sims

1883-06-28.



WORKS
BY
546 HIGH STREET.

HENRY HOWARD, President.
FARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., June 28th. 1883

Thomas A. Edison Esq.

Dear Sir

Our man has just returned and reported progress. There is some lost motion in our engines which can be taken out in a very short time. If you desire I will send one of our men on to arrange them for a few days for you. The man I sent to inspect the engines did not intend to remain with you.

I am not confident that our engine will govern itself together with Mr. Putnam. If our engines can run alone, or together I can promise you good regulation. Can I see you Sunday or Monday?

Respectfully Yours
Sims

See me Monday

THOMAS A. EDISON,
NO. 65 FIFTH AVENUE.

1883-07-02

NEW YORK

July 2nd 1883

Received from Thos A Edison
Cheque no 47 for fifteen
hundred (\$500) dollars, and
note no 8, payable in
sixty days, for Seventeen
hundred and Sixty (\$1760)
dollars, on account of
orders received from him
for Engines -

Amington & Sims Recd
Generalm C. Sims Cash



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

[Handwritten signature]

1883-07-03.

PROVIDENCE, R. I., July 3rd. 1883
5.30 A.M.

Thomas A. Edison Esq.

Dear Sir

Enclosed find receipted bill for engines shipped in June. Also bill \$18.18 for interest on note. Please send checks.

Your telegram just received and answered. If ordered immediately we can ship two 13x13 engines Aug. 1st provided they are same as sent to Chili, N. Y. and Boston Herald. They have standard regulator 60" pulley and run 250 per minute. Pair boxed, delivered f.o.b. here, \$1900. Above list price is \$2000.

We accept your offer of July 3rd for Central Station Engines. The terms are satisfactory.

Please see Mr. Chinmund about our negotiation at Central Station. The books were put in the wrong way and stuck casting. I am not yet ready to believe that he has been intentionally done wrong much but that we will soon overcome the difficulty.

Respectfully Yours Sincerely



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-07-03

PROVIDENCE, R. I., *July 3rd* 1883.

Thomas A. Edison Esq.

Dear Sir

Enclosed find copy of letter from Mr. Stuart
Santiago Chili.

We have just started up
duplicate of engine sent to Donanton Mills
It runs well and gives satisfaction. We
hope that we may soon get hold of
Donanton engine so that it can be sent
to Louisville to the Exhibition

Respectfully Yours
Sims

1883-07-08



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARKER WILKINSON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., July 8, 1883

Dear Sam.

I wish you would send my
trailing lag and umbrella by first express
as I am greatly in need of them. Our
man. ~~fixed~~ our regulator on first engine
in bad condition fine merit of attention and
care. He writes me that the regulator
is now good and satisfactory

Sincerely Yours

Sims

Thanks for check \$18.18 for Interest

Form No. 1.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECEIVED BY	CHECK
529	In	V	510
Received 852 BROADWAY.			
Dated Providence R.I.			
To Samuel Insull:			
65 Fifth Ave			
You have written Jan for details			
Birmingham & June			

This telegram has just been received at the office in 701 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRE.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARSON ARMINGTON, TREASURER.
GARDNER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

1883-07-001

PROVIDENCE, R. I., July 9th 1883
4.15 P.M.

Samuel Insull Esq.

Dear Sir

Your telegram for two 13 x 13 engines for London just received. To finish them by Aug. 1 you will please send immediately specs of engine, diameter and face of pulley. 13 x 13 engines for Chili same I think 250 per minute with 60" pulley, same as N. Y. Herald engine. Our regulator is finished for 250 revolutions and our pulley pattern are 60" diam. 1 1/2" face. Advise these dimensions and specs if possible.

Respectfully Yours

G. C. Sims Esq.

I find that engines are more than half finished and we shall be on time if you do not demand important changes.



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-07-09
*Can't say when will be
or will let you know {*
PROVIDENCE, R. I., July 9th 1883.

Thomas A. Edison Esq.

Dear Sir

On my return from New York I had
occasion to write Mr. Goff and mentioned
that you would soon be in Boston. I
enclose you his answer which may be of
service to you.

Respectfully Yours
G. C. Sims

1883-07-06

THE THOMSON-HOUSTON SYSTEM
of
Electric Arc-Lighting.

Electric Lighting Stations, complete with the Thomson-Houston System of Electric Lighting, with the celebrated Armstrong & Sims' High Speed Engines, constructed in towns and cities throughout the United States, whose territory has not already been ceded.

GENERAL OFFICES

The American Electric and Illuminating Co.

ROOMS 46, 47 AND 48
28 SCHOOL STREET.

Boston, Mass., July 6th 1883

G. L. Sims, Esq.
546 High St. Prov., R. I.
My dear Sir:

Your esteemed favor of the 4th inst. was received this morning on my return from Vermont. Will be very glad to meet you and Mr. Edison when in Boston and will be pleased to render him any service I can.

If the suit which the N. Y. parties have commenced against him is anything of any account whatever, I think I might be of service to him; at all events I can tell him a good deal of the history of that same crowd, who are the identical men who were concerned in the swindle of the American Electric Light Co. of Mass.

Please let me know when you and Mr. Edison will be here.

Your postal card received, and papers will be forwarded to Mr. Arrington, at the American Exchange, London, Eng.

Yours very truly, Edmund McBoff



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-07-10

PROVIDENCE, R. I., July 10th, 1883.

Thomas A. Edison Esq.

Dear Sir

Your telegram ordering two 13x13 engines
for London received. We have cranks
finished. If you require two 6" pulleys
on each engine we shall have to
make one pulley pattern for regulation.
This we will do. If however you have
ordered small regulator pulley we can
put the engine together at once.

Respectfully Yours

G. C. Sims Esq.

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THOS. T. ECCERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
84	L J m	217a	7611

Received at **791 BROADWAY.**

852 Broadway R 210 July 10 1889

Dated To

Thos A Edison 65 Fifth Ave

Cand deliver central station engines in

thirty days must know about speed &

pulleys of London engines we are

losing time

Armington & Sons

This telegram has just been received at the office in 791 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRE.

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assumed to by the sender of the following messages. -
 Errors are to be paid for only by resending a message back to the sending station for correction, and the company will not hold itself liable for errors or delays in transmission
 or delivery of Unrepeated Messages, beyond the amount of bill paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.
 This is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions named above.
 THOS. T. ROCKENT, General Manager.

NORTH GREEN, President.

NO. BY	NO. BY	RECD. BY	CHECK
249	GN	Bz	1570

Received at 852 BROADWAY July 1 1888

Dated Providence R.I.

To Thos A Edison

65 5th Ave

Do you want two sixty
cinch pulleys twelve the half
inch face on each engine

(sig) Armington & Sims

This telegram has just been received at the office in 781 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRES.

1883-07-14



WORKS
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., *July 14th* 1883.

Sam'l Knapp Esq

65-5th Ave New York

Dear Sir-

*Your letter received.
Enclosed find list of Engines to date - Still
ship 5 1/2 x 10 Engine to Boston Monday.
Four 13 x 13 Engines are progressing rapidly
and will be finished before we can get the
pullups - I'm giving you price for Engines,
we did not take into consideration large
pullups, Shaft, and new Regulator.*

*We will however stand by price given
you*

Very Truly Yours

G. C. Sims Supt.

1883-07-19



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., *July 19th* 1883-

Saml. Inouell Esq.

45-5th Avenue New York

Dear Sir

*Mr. Sims is still
confined at home and unable to attend
to business. We are giving the 13 x 13
Engine our attention and in all proba-
bility shall get our out in many days.*

*We lost a week from time of first
cable mail order. Had to make new
pulley patterns and also wait for
stock on account of changes made in
the order. We are working nights and
doing our best.*

Yours Very Truly,

Pardon Armington & Sons Engine Co.

H.B.

P.S. Tent Engine will be shipped next week.

Form No. 1.

1883-07-21

THE WESTERN UNION TELEGRAPH COMPANY.

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NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
43	S	O	7 fd 1915

Received at the WESTERN UNION BUILDING, 195 Broadway, New York, July 21 1888.

Dated Providence R.I. 21

To Saml Inzull

65 Fifth Ave N.Y.

Chl Engine next Saturday one
Wednesday following

Arrington & Sons



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-07-21

PROVIDENCE, R. I., *July 21*, 1883.

Saml. Inoull

New York

Dear Sir:-

Your letter and telegram received. We direct you on receipt of telegram this morning that we could ship the first thirteen by thirteen engine for London next Saturday, and the second the Wednesday following.

We are making haste on this order, and using every effort to get the engines out as soon as possible. We may get the pulleys done in time to ship both engines next week, but we can guarantee to ship them on the above named days.

*Yours truly
A. and S. Engine Co.
P. R. A.*



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-07-27

PROVIDENCE, R. I. July 27 1883.

Emst. Smith.

Dear Sir,

Yours of the 26th recd. We are making night and day on your engine. Have had two separate sets of men at work on them all this week. The first engine is finished with the exception of firing up. Give us the foundation this afternoon.

Yours truly
The A. and S. Engine
F. B. H.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-07-30

PROVIDENCE, R. I., July 30, 1883.

Saml. Innull
New York.

Dear Sir,

Your favor of the 28th recd. Your engine is now running on the foundation - will go by boat tomorrow. We will have to disassemble for a day with the second engine, as it is not possible to ship it before Thursday. Our shop has not been shut down for a week - have done everything possible to help you out in this matter.

Yours truly
The Samuel S. Engine Co.

12
ed.
1883
28
V

100 100 100 100 100
100 100 100 100 100
100 100 100 100 100
100 100 100 100 100
100 100 100 100 100

1883-08-08



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I. Aug 8 1883

Thomas A. Edison

Inclosed find bill for
13 x 13 Centineer Thruster Engine shipped this
day to New York care of H. B. & F. 54 Wall
St. Bill loading has been sent them. It
will be two days before we can ship
Bentley engine. We now have one shaft
as the latter that looks like a good one.
We have now turned seven bad ones that
we rejected.

Respectfully Yours

G. C. Sims Esq.

Widely you better abandon
your method of Steel Castings
do it the regular way
Sometimes the longest way around is
the shortest way home

Form No. 1.

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THOS. T. BUCKERT, General Manager.

MORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	TIME
362	am	B	11:16

Received at **852 BROADWAY.**

2416

Aug 8 1888

Delivered Providence R.I.

To Sam & family Co. & are

Engine shipped to London for action

ten days see letter

Armington Paris & B

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.



WORKS
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., Aug. 10, 1883.

Thomas A. Edison

Dear Sir,

We have just made
and from John G. of Toronto Canada who
has commenced the manufacture of engines
there, stating that a fair model be given
in Toronto the first of September and asking
us if we could put in an engine. This we
have decided to do, it will be a plan and
8310 and will be shipped next week.

If you intend
submitting there, if so we would like to run
our engine in connection with your light-
ing apparatus of Edison Light Co. will be
represented. Mr. Bagley of the committee
will give you details concerning the fair.

Yours truly
G. C. Sims Esq.

AUG 11 1883

RECEIVED

Aug 14 1883

FILE NO.



RECEIVED

AUG 11 1888

ANSW. R.

FILE NO.

COST OF RUNNING SHAFTING.

The American Electric Light Co. of Boston are using in their station two styles of engines. One is a 150 H. P. common style long stroke engine; the others are the Armington & Sims Co. high speed engines, which connect direct by belts from driving wheels to the dynamo electric machines. The long stroke engine runs a line of counter-shafting, and the machines are belted from this shafting. A test was recently made by indicating the engine, to find the actual power required to run the line of shafting, and the result shows that it took twenty-two and a half horse power, or 15 % of the power of the engine was wasted in running this shafting. This is equal to 1000 lbs of coal a night. The American Co. have decided to remove all long stroke engines from stations they have recently taken possession of by consolidation with other companies. The success of the American Co. has been in reducing the cost of making motive power by using direct acting engines, and burning the cheapest fuel under boilers set with the Jarvis Furnace.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-07-14

Aug 15 1883
Providence

FILE No. 165

PROVIDENCE, R. I., Aug 14, 1883

Thomas A. Edison
New York

Dear Sir,

Just came, recd.
ordering one 13x13 engine for London. This
engine will be ready for delivery in three weeks.

Yours truly
The Providence Engine Co.



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARSON ARMINGTON, TREASURER.
GARDNER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

1223-08-14

RECEIVED
AUG 20 1883
Aug 21 1883
FILE

PROVIDENCE, R. I., Aug 14, 1883.

Saml. D. Small & Co.
Dear Sir,

Have in receipt of your
invoice of the 14th. It is shall have to charge you
\$19.50 for the 14 1/2 13 engine sent to England.
You are entitled to one pulley and we make
no charge for that. - the pulley cost us \$3.00
for turning and \$2.00 for sticks. The other make on
connecting rods assembled to \$15.00 extra sticks in
shaft \$3.00. We make no charge for extra time on
regulating or for boring. You will readily see
by these figures why we feel obliged to charge
\$19.50

Yours very truly
The Providence Engine Co.

Form No. 1.

776 1883-08-17 **THE WESTERN UNION TELEGRAPH COMPANY.**

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. FOCKERT, General Manager. NOAH V. GREEN, President.

NUMBER	SENT BY	RECEIVED BY	CHECK
29	W. H.	10th St	1883

Received at the WESTERN UNION BUILDING, 195 Broadway, New York.

Dated Providence R.I. 1883

To Thomas A. Edison
55 Fifth Ave N.Y.

Engines for brockton and
Insurance finished waiting
for shaft well ship both in
ten days
Armington Sims Co



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1873-08-21

RECD.
AUG 23 1883
ANSW.

FILE NO. 258

PROVIDENCE, R. I., Aug. 21, 1883.

Thomas A. Edison
New York.

Dear Sir:-

Mr. G. W. Brown
Pres. Edison Elec. Illu. Co. of N.Y., writes
for price of 14713 with 66" during full year and
8710 with 48" full year. Requested \$250 and \$50

Yours truly
The Armington & Sons Co.

1883-08-23



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

RECEIVED
AUG 24 1883
ANSWERED

PROVIDENCE, R.I. No. ¹⁸⁸³ Aug. 23^d. 1883

Thomas A. Edison Esq.

Dear Sir

Your letter of the 21st inst. received. The regulation of our Centual Station engines is not satisfactory at present. We can make them satisfactory, but not without some assistance from you. We do not ask you to assist us in making any changes with our engines, as we can make them regulate. Enclosed find four indicator cards. No. 1 & 2 were taken from 14 1/2 x 13 engine at Riverside Mill. Pressure 6" steam pipe, one elbow and gate starting valves. Cards were figured by Mr. F. Moore. Friction card gives 14.51 H.P. 248 revolutions. Card No. 2 gives 120.64 H.P. 245 revolutions. Engine drives six Bowls Dynamis 93 lights. We call this good regulation. Card No. 3 is taken from one of your Centual Station engines a duplicate of engine at Riverside Mills. The card is very poor indeed. Steam line has not warranted economy or good regulation. Card No. 4 was taken after considerable experimenting to see if it was possible to produce from one of our engines

a cord like No. 3. It was done by partly closing two starting valves so that the steam would rise slowly and then applying load enough to bring the engine full speed. We obtained nearly the same steam pipe conditions you give us at your Centric Station. We desire to call your attention to one 12x12 Paris Engine indicator cord, ^{page 20 of our catalogue} taken by Charles L. Clarke Eng. at Laramie. The steam line is perfect. The steam pipe was direct with one elbow. After the engine reached Rank. It was lost 15 pounds pressure between boiler and engine. You may remember that you objected to this loss. I asked to have two elbows taken from steam pipe, gate valves in place of globe valves, and the engine turned around and set under steam pipe. You consented, and one loss was only 5 pounds. At the Centric Station we would like steam pipe not less than 6 inches diameter, no gate valves in place of angle and globe valve starting valves now in use. Avoid elbows by using quarter bends. Any change that you can make that will give us sufficient volume of steam at the steam chest is all we require. We will attend to the engine.

1883-08-23



WORKS
AT
346 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I.

188

I have given this subject my attention and cannot understand why these three engines should influence your future orders, as you do not complain of our engines that belt to your dynamos. We expect a variation of 2% in speed. In many cases we only lose 1%. I believe the engines and dynamos are out of line and from the peculiar construction of your station I do not see how it can be helped. The engine and dynamo bearings cannot run smooth under the circumstances. We have telegraphed twice for parts of one engine, and had it been shipped promptly the changes would be made next Sunday and the engine running Monday morning. We have had no word concerning these parts and do not know why they are not forwarded to us. Part of the work is under way and will be completed as soon as parts manufactured arrive. We will ship Packten engine Sept. 1st. Respectfully Yours G. C. Sims Supt.

In comparing our engine with Porter Allen
you will please remember that the revolutions
of both engines are the same, and we are
supposed to get 165.13 and while his is only
95.03 or 57% less.

G. B. S.

Aug 23rd/13
W. B. Davis
The Association of
Central Stations
Engineers



WORKS
AT
596 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I. Aug. 24th 1883

Thomas A. Edison Esq.

Dear Sir
Your order for $14\frac{1}{2} \times 13$ engine received.
Berkton and Lawrence engines have been
finished four weeks with exception of cranks.
We now have cranks for these engines
nearly finished. We have four $14\frac{1}{2} \times 13$
engines nearly finished. If you will
give us some idea of your future wants
and date of shipments we will be on
time. We ordered our steel castings from
Eureka Cast Steel Co. and Chute Steel Casting
Co. both of Chute Pa. We finished and
returned 18 imperfect cranks. We regret the
delay. The fault is not with us.

Respectfully Yours

G. C. Sims Esq.

I don't doubt that you made your
cranks in the regular way. Evidently you could
do it cheaper than sending back 18
imperfect cranks with the labor on them. E

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

FORVIN GREENE, President.

NUMBER	SENT BY	RECD BY	CHARGE
119	Co	H 10/2	122

Received at **852 BROADWAY.**

Aug 21 1888.

Date Providence R.I. 25

To Thos. Addison Edison 65-5 an

Call at Central Station Sunday
 Morning & meet Mr. Littlefield
 G.C. Sims

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

Form No. 1.

1223-08-30

THE WESTERN UNION TELEGRAPH COMPANY.

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T. K. KOKERT, General Manager.

NORVIN GREEN, President.

RECEIVED	SENT BY	RECEIVED BY	CHECK
450	7/20	1300	450

Received at **852 BROADWAY.**

Dated *Aug 30 1883.*
Providence RD
 To *Wm A Edison*
65- 5 Ave

Shall speed the three Fifth
with forty Eight inch
pulley twelve inch face
Armington & Sims

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

Form No. 1.

1223-08-30

THE WESTERN UNION TELEGRAPH COMPANY.

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T. K. KOKERT, General Manager.

NORVIN GREEN, President.

RECEIVED	SENT BY	RECEIVED BY	CHECK
472	7/20	900	476

Received at **852 BROADWAY.**

Dated *Aug 30 1883.*
Providence RD
 To *Wm A Edison*
65- 5 Ave

Can ship engine three weeks
from receipt of order.
Armington & Sims

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-07-30

PROVIDENCE, R. I., *Aug. 30* 1883
3.30 P.M.

Thomas A. Edison Esq.

Dear Sir

Your telegram concerning six $8\frac{1}{2} \times 10$ engines for Engle just received. We have the work for twelve engines finished. They can now be put together and shipped. Your last order for $8\frac{1}{2} \times 10$ engines requires $48''$ pulley $12''$ face 350 revolutions.

I have just received your asking about pulley and shaft. Our receipt of your answer we can tell you at once about shipments.

Respectfully Yours.

G. C. Sims

If you require standard engines 320 $40''$ pulley, so much the better for us



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

D 1883

Edison, T.A. -
Advice

PROVIDENCE, R. I. Aug. 31st. 1883

Thomas A. Edison Esq.

Dear Sir

I enclose find bill for engines shipped
in July and Aug.

Please send us check
to meet our pay roll Sept. 4th, and
oblige

Respectfully Yours

G. C. Sims Esq.

Providence
ARMINGTON & SIMS CO.,

1823-09-02

PROVIDENCE, R. I., U.S.A.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

WORKS
AT
546 HIGH STREET.

PROVIDENCE, R. I., *Sept. 2* 1883

Dear Sirs,

I find that we now have
\$32,000 due for engines. \$9000 is an
exhibition in different fairs. I now in
hope you would make the advances you
propose on all orders as it would assist
us in carrying your large stock here.
To meet your wants we have to be
ready and give you our best efforts.
Do your best for me as I have not
a dollar to meet our pay roll.
Portable engine is finished and on
its foundation. We get steam on
tomorrow and test it Tuesday we will
ship it Wednesday if it runs to suit
us. We have plenty of shafts on
hand and engine for Lawrence
will be ready before you are with

your conductors.

I was not aware
that Mr. Deane had left you
until Saturday Aug. 25. I am anxious
to see you concerning some of
your recent letters and am deeply
pained that any occasion should
be given Mr. Edinore to think for a
moment that I was not making for his
interest.

Your devotion to Mr. Edinore is
noticed, and appreciated, by my friends who
come in contact with you. I cannot
understand why I am placed in such a
light before you. Believe me

Sincerely Yours
J. B. Deane

J. B. Deane

to
J. B. Deane

Sept 2 1873

33

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted by the sender of the following message. Errors can be corrected only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or omissions in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
164	Ma	Bp	Nord
Received at 852 BROADWAY Sep 3 1888.			
Dated Providence R: 3			
To New A Edison 65-5th Ave			
Note should be at Importers & Trade Bank New York			
Arrington & Lewis			

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
83	Dj	Bp	12 Pd
Received at 852 BROADWAY Sep 4 1888.			
Dated Providence R: 4			
To New A Edison 65-5th Ave NY			
Can ship first engine for London immediately the remainder in three weeks			
Arrington & Lewis			

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.



WORKS
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-09-04

PROVIDENCE, R. I., *Sept 4th* 1883

Thomas A. Edison Esq.

Dear Sir

Your letter of yesterday received. The receipt of your first telegram concerning six 8 $\frac{1}{2}$ x 10 engines for London I answered, giving time of shipment. I also sent you a message next morning to let you know I received your letter, and in answer to it. I have just wired you that first engine can be shipped immediately, remainder in three weeks. I am anxious to know what you received as our telegraphic messages have been "off" for some time. For instance Mr. Moore telegraphed me "I will leave for Louisville Thursday night" This is what I received "Estelle leaves for Louisville Thursday night." I did not know what to make of it, and suppose it refers to some girl. I wish was sending South

Respectfully Yours Sincerely

1883-09-05

ARMINGTON & SIMS CO.,

HENRY HOWARD, President,
PARSON ARMINGTON, Treasurer,
G. C. SIMS, Superintendent,
C. T. HOWARD, Secretary.

WORKS
516 HIGH STREET.

PROVIDENCE, R. I., U. S. A.

PROVIDENCE, R. I., Sept. 5th 1883

away
 I suppose we get the young man by the balls
 now explain that there was no
 jealousy but we wanted to put him on his
 grand against talking too much of
 our inside big

Your letter received. You can buy
 your castings in this City of the same material that
 our engines are made of, pickled, steamed,
 delivered f.o.b. cars or boat for .02 3/4 per lb. You
 can freight them to New York by New York & New
 England for .16 per hundred. I have heard of .12
 per hundred being made. Rates by sailing vessels
 are cheaper. You will find the material ex-
 cellent to work on lathes and planers and all
 castings are cast in facing sands. I hope
 to call on you next Saturday.

Please say to
 Mr. Edison in answer to his letter that I did
 not say that I would be willing to build his
 dynamos. I did however say that we could
 build them shorter, less than they had been
 built. I did not say this as I respect him
 to interfere with, or deprive of his business, as
 I often have the same work of our engines.
 I was afraid to think it should be said that I

did not have his interest at heart or that
any person should so infer. Some time has
come when all persons interest in the Editor
of the ~~Editorial~~ should be left right of
and all made together to make a grand success
of the best opportunity of a life time. Your business
cannot go along and succeed if jealousy is to have
the preference. If I can assist you at any
time at Brook St. I should be very glad to
do so. I thank you for your kind invitation
and will accept.

Believe me

Sincerely Yours
Sims

Sept 10/83.

J. E. Sims

re your letter in

re to building

Byronwood

1883-09-12
ARMINGTON & SIMS Co.,

PROVIDENCE, R. I., U.S.A.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

WORKS
AT
545 HIGH STREET.

PROVIDENCE, R. I., *Sept 12* 1883

Dear Sirs.

I have had
note discounted. \$3600 83 days.
6%. Due Dec. 4. \$49.80
Please send check.

Had a bad
night on the steamer. Severe
storm

Sincerely Yours
Sims

RECEIVED
SEP 13 1883
ANS.

SEP 13/1883
FILE No.

This C.R.

1883-09-15

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assumed to by the sender of the following message. Errors can be guaranteed against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of telegraphed messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented ^{within sixty days after sending the message.}

THIS IS AN UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
364	xy	R	9 paid

Received at 852 BROADWAY.

Sept 15 1883.

Dated Providence R I 15
To Mr. A. Edison -

For marks from Receipt
of order have residence you
Armington - 9 Sun
Eng. Co -

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

0-05

1883-09-15

ARMINGTON & SIMS CO.,

PROVIDENCE, R. I., U. S. A.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

WORKS
AT
546 HIGH STREET.

PROVIDENCE, R. I., *Sept. 15* 1883

Thomas A. Edison Esq.

Dear Sir

Your telegram received. We can ship immediately two $6\frac{1}{2} \times 8$. One $8\frac{1}{2} \times 10$ two $9\frac{1}{2} \times 12$. 13×13 for London and $14\frac{1}{2} \times 13$ for Louvain about Sept. 22nd. We can ship another 13×13 to London in two weeks after receipt of order although we can't at work on two as we have anticipated your order. We have four $14\frac{1}{2} \times 13$ more than half finished and shall keep at work on them.

Respectfully Yours

G. C. Sims

1893-09-15



HENRY HOWARD, President.
 PARDON ARMINGTON, Treasurer.
 GARDINER C. SIMS, Superintendent.
 CHARLES T. HOWARD, Secretary.

RECEIVED
 SEP 24 1893
 ANDREW

FILE NO.

WORKS
 AT
 546 HIGH STREET.

PROVIDENCE, R. I., Sept. 15th. 1893

Thomas A. Edison Esq.

Dear Sir

Your letter received. Our valves for 14 1/2 x 16 1/2
 engines are one standard size and fitted
 to steam² shafts. They cannot be changed with-
 out considerable expense. If you desire we
 can furnish at cost, a piece of 4 1/2" pipe with
 flange connection for 5" pipe. Our engines are
 piped in that way. Why are 5" valves with
 19.63" and 250 revolutions when yours have
 only 10 1/2" 350 revolutions at Central Station?
 Mr. Rich can get 4 1/2" pipe in Boston or
 reduce yours 5" to 4 1/2"

Respectfully Yours
 G. C. Sims

Form No. 1.

1883-09-19

THE WESTERN UNION TELEGRAPH COMPANY.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER 576	SENT BY C	RECEIVED BY RD 13 paid Sep 20/93	ANSW 1000
---------------	--------------	-------------------------------------	--------------

Received at **852 BROADWAY.** FILE No. *19* 1883.

Dated

Providence R.I. 19

To

Thomas A. Edison

65 Fifth Ave

Meet W.L. Hall at
Fitchburg tomorrow at eleven o'clock
on Lighting business

G. C. [Signature]

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

1883-09-22
ARMINGTON & SIMS Co.,

PROVIDENCE, R. I., U. S. A.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

WORKS
AT
545 HIGH STREET.

PROVIDENCE, R. I., Sept. 22, 1883

Thomas A. Edison

Your order for
13x13 Berlin engine received.
The foundation plan is same
as used by Incandescent Lighting Co.
as shown in your catalogue.
If they are not satisfactory we
will send you three prints. Please
send one of your catalogues to
E. H. Borden at the S. May
Yards Boston Mass.

Respectfully Yours

G. C. Sims Sept.



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-09-26

PROVIDENCE, R. I. *Sept. 25th* 1883

Thomas A. Edison Esq.

Dear Sir

*Allow me to introduce to you my old
friend Henry T. Gardiner Esq. who has just
returned from Buenos Ayres S. A. having
been located there for the past ^{two} years and
on half.*

*Mr. Gardiner can tell you much of
Telephones and Electric Lights in South America*

*Respectfully Yours
G. C. Sims*

1883-09-27



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
FARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES HOWARD, Secretary.

*Letter when we will be
in Providence, R. I., Sept. 27th 1883*

Thomas A. Edison Esq.

Dear Sir

Your letter received. You would not require new pistons, only piston rings. We can send you duplicates. If the rings should give out, and you were hard pushed to use the engine you could do so without the rings. It will be impossible to duplicate the valves as they are not always same diameter owing to imperfections of castings. We could center, turn, and square them up, so that they would be $\frac{1}{16}$ over diameter, then in case of accident you could send valve to machine shop, using the old one for size, and have it turned down in a very short time. Concerning Babbitt boxes. We can duplicate all future orders, and send you extra pieces. Prof. Thurston was here yesterday and liked your engine. Engine and dynamo (J & H) 283 Revolutions, with 25 lights 282 R. with 50 lights 281 R. with 60 lights 281 R. Send me word and I will meet you in Boston. Respectfully Yours

C. C. Sims

(883-10-04



HENRY HOWARD, President.
FARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

WORKS
AT
546 HIGH STREET.

PROVIDENCE, R. I., Oct. 4 1883.

Mr. Samuel Insull,
New York City, N.Y.
Dear Sir,

Your favor of the 3rd
inst. together with check for \$1375.00 has
come to hand and has our attention.

The note referred to has not yet been
received but we doubt not our Mr. Sims
will bring it with him, tomorrow, on
his return from Brockton, where he is
passing the day with Mr. Edison.

Thanking you for all we remain

Yours very truly,
Armington & Sims Engineers
per Andrews.

We enclose receipt.



WORKS
AT
545 HIGH STREET.

HENRY HOWARD, President.
FARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-10-06

PROVIDENCE, R. I., Oct. 6 1883.

Mr. Thomas A. Edison,
New York City.
Dear Sir,

As requested in
your letter, we below send Memo. of
the discount on your Note dated Sept 22.
1883, three months, and remain

Yours very truly,
Armington & Sims Engine Co.
Wm. Andrews.

Memo - Oct. 5, 1883 -

Note due Dec. 25, 1883.

Time - 81 days @ 6%.

Brokerage - 1/16%.

Net proceeds

18.56

3.44

22.00

1375.00

1353.00

1883-10-06



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

RECEIVED
OCT 8 1883
AMSWORTH

PROVIDENCE, R. I., Oct. 6th 1883

Thomas A. Edison Esq.

Dear Sir

Many thanks for your order. We can ship
14 1/2 x 13 and 8 1/2 x 10 engines in one week as
they are finished and it is only necessary to test
them.

Your 13 x 13 engine for London will leave
here next Tuesday night by steamer for New York
carrying pulleys for 8 1/2 x 10 Fall River engine
Your last order was 48" x 12 1/2" frame. We have made
pulleys of that size finished. It will reduce the
frame of pulley to 11" to correspond with pulley on
your dynamo.

Respectfully Yours
G. C. Sims Esq.

1883-10-07



HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I. Oct. 7 1883.

Dear Sam.

Please send me as soon as possible a speed indicator same as used on our engines at Central Station. I believe it is about 6 inches diameter and is driven by a belt.

Thank it up Sammy and oblige
Sincerely Yours
Sims

My shoulder is almost well again. It has troubled me terribly

1883-10-09



WORKS
AT
545 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
GARDNER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

PROVIDENCE, R. I., Oct. 9 1883

Dear Sam.

Your order for $8\frac{1}{2} \times 10$
for London received. We immediately
broke engine and shipped it with
 13×13 . Enclosed find bills, and $\$1\frac{1}{2}$ for
 $8\frac{1}{2} \times 10$ Frank Amington sent $\$1\frac{1}{2}$ for
 13×13 to Haywards. Put & Franklyn
54 Wall St. where you will find
it.

The $8\frac{1}{2} \times 10$ was sold, and ready to
ship to Dupelo Station N. S. N. Depot
R. I. You were fortunate

Sincerely Yours
Sims



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-10-10

PROVIDENCE, R. I., Oct. 10 1883

Thomas A. Edison Esq.

Dear Sir

We sent one of our men to Rochester to look the engine over. He found the regulator lever bent. How this was done we do not know. You were quite right about the friction of the regulator and owe me \$10. "2 tumblers".

It will be to our mutual interest to have our men go and start your engines and instruct your engineers. I will furnish the men if you will pay traveling expenses and board bills. What do you say?

Yours Truly

Sir William

(John C. Sims)

Form No. 1.

1883-10-27

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
331	MAN	10 Oct	

Received at 852 BROADWAY.

Dated Nov 10/27 1888.

To: Thos A Edison

65-5 at Oct 27 1888

Valve goes to Shamosen

at two ten this PM

Armington & Sims Eng Co

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

Form No. 1.

1883-10-29

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
340	R	7 Oct	

Received at 852 BROADWAY.

Dated Providence R 29 Oct 29 1888.

To: Thomas A Edison

65-5 at

The Express to Shamosen values

tonight

Armington & Sims Co

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.



WORKS
AT
546 HIGH STREET,
PROVIDENCE, R.I.

1883-10-31

HENRY HOWARD, President,
PARDON ARMINGTON, Treasurer,
GARDINER C. SIMS, Superintendent,
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., Oct. 31 1883

Dear Sam.

I was in Lawrence yesterday and saw the new Station. Everything worked well. Mr. Lord said he would pay your bill immediately if the meter were there and in condition. You will understand what is wanting.

Rich writes and wants 14 1/2 x 13 and 8 1/2 x 10 for Fall River. They are finished except pulley for 8 1/2 x 10. You said you would send size. We have the standard pulley 40" x 8 1/2" frame and your special pulley 48" x 11" frame. If you can run one of these we can test engine and ship immediately. If not, it will take two weeks to make special pulley if we have to

Oct 31. 1893

S. b. Sims

make pattern. Delegate so that
we may know what to do for
Rich. re Mr Rich wanting

We can furnish one 14/2x13
in two days after receipt of
order. 13x13 for Berlin shipped
to day, 13x13 for Flint Mills
Falls River was finished some time
ago. They ordered it not to be
shipped for a few days. Have me
some ideas of your future wants as
we have \$40.00 worth of large engines
ordered. I do not want to get
behindhand on your work.

Sincerely

Yours

Sims



1883-10-31

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

WORKS
AT
146 HIGH STREET.

PROVIDENCE, R. I., Oct. 31/1883.

Mr. Thomas A. Edison.

No. 65 Fifth Avenue, New York City.

Dear Sir,

We have this day
shipped to the Deutsche Edison Gesellschaft
Berlin, Germany, Engine No. 1540-15 x 13-
No. 28 as per your order of Sept. 27, 1883.
We herewith enclose bill for the same, and
duplicate Bill of Lading. Trusting
that the Engine may arrive safely and
prove satisfactory, we remain,

Yours very truly,
Armington & Sims Engineers.
per Andrew

1883 1882

Nov 2d 1883

Amington⁹ Minn Co

To Bess Payable

\$1975

Part of Shingles note for \$5250



WORKS
AT
516 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

OK

1883-11-03

PROVIDENCE, R. I. Nov. 3d. 1883

Thomas A. Edison Esq.

Dear Sir

Enclosed find letter from Mr. Rich. Please return the receipt of his letter on immediately sent one of our men to Brooklyn to put the engine in condition if possible. He did so, and has just returned. He brought with him the cross head key, and I agree with Mr. Rich when he says, "in the whole I think it is a very bad job." It is a bad job, and I earnestly protest against the reports of Mr. Rich concerning the standards of our work, made upon representations of others, and not from his personal examination. We invite close inspection of our work and are confident that our standards has no superior. Our men found that the cylinder had been filled with water which was the cause of the cross head key being bent in the position it was in when you saw the engine. It was then driven down and the cylinder filled with water the second time, as admitted by your

1893-11-03



WORKS
546 HIGH STREET.

HENRY HOWARD, President,
PARDON ARMINGTON, Treasurer,
GARDNER C. SIMS, Superintendent,
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., ... 188.....

men. The key received another off set, as did the connecting rod bolts which escaped the observation of Mr. Rich. We have put in new cross head key, but will send one more again, to put in new connecting rod bolts, and refit the piston rods to the cross heads, hoping that a new one will not be necessary.

I do not in any way think that Mr. Rich desired to find fault with our work, but knew that he has been impeded one at Rochester. I shall deem it a favor if he will at all times refer to any thing that is not satisfactory. I shall have our patterns changed immediately and put relief pop valves on all cylinders. If you will examine our regulators at Central Station you will find that we have followed your suggestion, by increasing our regulator weights and using stronger springs. Believe me Sir Thomas

Respectfully Yours
Sims

Regards to Sir Samuel



WORKS
AT
540 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-11-07

PROVIDENCE, R. I., Nov. 7 1883.

Samuel Inoull Esq.
New York City
Dear Sir.

RETURN BILL AND VOUCHER.

Herewith please
find Memo. of discounts of Mr. T. A. Edison's
Note dated Nov. 2/83 - 3 mos. - \$3525.00 which
we send in response to request made
to our Mr. Sims when in your City

Yours very truly,
Armington & Sims Engine Co.,
per. Andrews

Memo. of discounts Nov. 5. 1883.

Note due City. 5. 1884. \$3525.00

Discount 6% 212 days 54.05

Brokerage 1/4%. 8.81 62.86

T. A. E. 27.65 \$3462.14

Interest 35.21

\$62.86



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I.

58
of. Invoice
Nov 7/83
1883-11-07
Nov Date
to
th
Nov 1883

My Dear Pat,

I did not get your telegram about Upton till it was too late to answer you. Tell Hastings to give Upton \$1000 if Upton has bills in.

I am glad you have the checks from Road. Don't pay out a cent except for notes there are two due Saturday I think - look in the note book & make correct.

Winding up Peffer Copper. Am glad you can get the remainder of the Fall River Copper this week.

Tell Ernest to ship the two - 350. Eight machines to Dively Fall River and two 14" machines to Rich Fall River. You must have Russia

account made up in shape
showing exactly what Copp
has had supplied him with
on each order. Also giving
him credit for your share.
I want to see what we
have him on each job.

I wish you this am.
to send Norwich. That is
estimated to Boston.

You should see Hastings
about Hartford. It was to
write Sanders & Robinson
saying I would go to Hartford
if they would make an
appointment. It was for them
to make the appointment & not
me. You can write them
saying I am east but that
you can make an appoint-
ment for any evening next
week after Thursday. Kasei will
be in ~~New York~~ tomorrow
you should see him & let
him to go to Danbury
& then you can push the

1883-11-07



HENRY HOWARD, President,
 PARSON ARMINGTON, Treasurer,
 GARDNER C. SIMS, Superintendent,
 CHARLES T. HOWARD, Secretary.

WORKS

516 HIGH STREET,

PROVIDENCE, R. I. 188

estimate so that I can
 take it to Hartford with
 me. In writing Harris
 & Robinson suggest widening
 next four or five feet
 Hartford.

Please see Mr. Edwards
 tell him that it is absolutely
 necessary for the Fall River
 people to raise the City
 Buildings immediately. He
 must not tell them to wait
 till the Board of Free Under-
 soulters pay on that
 new Cable. They must be
 allowed to go right ahead.
 The reason is the City Quota
 occurs inside of a month,
 if the Fall River Campaign
 does not get the City Quota
 raised before the election.

seems they will have
great trouble later on.
Tell McKesson that Livingston
should be sent on to Fall
River at once - not next
week - but at once to
advise Dweller as to how
to do the fighting. The Fall
River Co. will pay expenses
also tell McKesson that the
Fall River people want to
go ahead & do general mining.
Dweller says Mr. C. said he'd
go over to Fall River before
Saturday last & start their
going. He has of course not
been there & I think that the
Fall River people should be
allowed to go ahead. The
directors of the Fall River
Company are very anxious
about this matter & have
passed a resolution
authorizing Dweller to
go ahead working after
communicating with me.

1883-11-07



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Secretary.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R.I.

188

Edison & if Mr. Edison refuses
to allow them to go ahead
& get a lot of lights ready
for starting the Station
I think he will be making
a great mistake.

You should keep on
hiring more money. Keep
on the Fall River Claiming

All Beugmann & Co. that
they are currently employing
our business is all day
on factories for repairs. This
is the most important thing
to hurry just now & you
should not only see
Beugmann about it but
also Johnson & Edison.

You should start J.C.
Campbell on our Piles
& get them in shape. This

about time he got through
in the Eng's Dept. I am sure
we all want attention.

Did you go for Randolph
about that statement he
put in to me of what we
saw.

Please have him go into
the Camp Co's app & see
how it stands. I think the
Poulsen Anderson app & the
Construction app have got
mixed as I noticed that
Randolph showed over \$5000
owing the Camp Co and
Poulsen Anderson app & I do not
think this can be so.

I shall go to Boston tomorrow
(Thursday) morning early
& shall stay at the Hotel
Vendome - I shall go on
to Lawrence tomorrow & return
to Boston in the evening. I shall
see Garrison Friday & return
to New York Friday afternoon or night.
Yours
J. S. Sull



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-11-10

PROVIDENCE, R. I., Nov. 10, 1883.

Thomas J. Edieon Esq.

Dear Sir:-

Your letter and telegram received. In shipping the 8 $\frac{1}{2}$ "x10" and 9 $\frac{1}{2}$ "x12" Engines we send one foot and a balance wheel, the 14 $\frac{1}{2}$ "x13" one regulator pulley, a balance wheel and two feet. Below we give weights of the separate parts

8 $\frac{1}{2}$ "x10"	9 $\frac{1}{2}$ "x12"
One Engine 2952 1/2 lbs	One Engine 3622 1/2 lbs
" Bal. Wheel 450 "	" Bal. Wheel 770 "
" Bot. 98 "	" Bot. 108 "
Total. 3500 1/2	Total 4500 1/2

14 $\frac{1}{2}$ "x13"
One Engine 7054 1/2 lbs
" Bal. Wheel 1320 "
" Reg. " 1317 "
Bot. w 120 "
" f. 189 "
Total. 10,000 1/2

These weights are for domestic shipments. Engines for abroad are tested and weigh a little more.

Yours truly
A & S Engine Co.

1883-11-12

Armington ⁹⁴⁰ Luis

To Bills Payable 19.81.43

Part of 3 kw note 3781.43 kw 12th

Armington ⁹⁴⁰ Luis

To Bills Payable

3 kw note kw 12th 3781.43

Engine 1883-11-13
ARMINGTON & SIMS Co.,

PROVIDENCE, R. I., U. S. A.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

WORKS

PROVIDENCE, R. I., Nov. 13, 1883.

345 HIGH-STREET.

Thomas A. Edison Esq.

No. 65 Fifth Avenue, New York City.

Dear Sir

Enclosed here with

please find bill of two Engines shipped
to Mr. W. D. Rich Supt. Edison Electric
Illuminating Co. Fall River Mass.

This fills your order No. 286 and we trust
all may be found correct and satisfactory.

Yours very truly,

Armington & Sims Engineers

per Andrews



WORKS
BY
540 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-11-16.

PROVIDENCE, R. I. Nov. 16 1883.

Thomas A. Edison Esq.

Dear Sir

We thank you for your order, for
1 1/2 x 13 and 8 1/2 x 10 Engines. They
are finished, and only require fitting
with steam. This is a matter of
two or three days and you can
rely on us for prompt delivery.

Yours Respectfully

G. Sims

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

SUMMER	SENT BY	RECD BY	CHECK
3213	CS 10	C. J. D.	1220

Received at 852 BROADWAY.

Dated

Providence R. I. 19,

Mar 19 1888.

To

Thos A. Edison

65-5 Ave

Will ship engine tomorrow
for Phoenix Co.

Armonington & Sons

Engine Co.

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES



WORKS
545 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARSON ARMINGTON, TREASURER.
GARDINER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

PROVIDENCE, R. I. Nov. 19, 1883.
10.20 P. M.

Thomas A. Edison Esq.

Dear Sir

We have about finished No. 210 for Shamokin
and will ship it by Steamer tomorrow. It will
arrive in N.Y. Wednesday morning. Our man
started tonight and I have written Mr.
Morse to go to Shamokin and do all he
could to assist in getting over the difficulty
whatever it may be. Please write us
concerning the engines and oblige

Respectfully Yours

Sims

4

1883-11-09

Major Eaton,

I enclose you herewith letter from Mr. Sims as to the engines at Shchokin. As stated in another memo., I will send you our reports immediately we get them back from Providence.

S. Insull,

November 19th. 1883.

per G.

J.

1883-11-14



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I. Nov. 14th 1883

Thomas A. Edison Esq.

Dear Sir

Our man has just returned from Steamship and reports as follows. "The engine ran well for three weeks, or until the oil you furnished was exhausted. An inferior quality of oil was then used on the eccentric. It warmed badly, and your idea of excessive friction prevented regulation. An attempt was made to take the regulator pulley off, but being unable to get the key out, the pulley was pushed on, so that regulator was tight against the bearing and regulation was impossible. After making the necessary changes, the engine ran well until it heated, and the poor oil failed to properly lubricate. A quantity of cylinder oil was then put on the eccentric and everything went well. Our man ordered some "Vacuum Oil" from Boston, although it could have been found at 96 Water St, New York, and it will lubricate to your satisfaction and ours. The President of

1883-11-14.



HENRY HOWARD, President.
 PARSON ARMINGTON, Treasurer.
 GARDNER C. SIMS, Superintendent.
 CHARLES T. HOWARD, Secretary.

WORKS
 AT
 546 HIGH STREET.

PROVIDENCE, R. I., ... 188.....

your Shamokin Co. condemned the engine and said he would return it to us. Well if I had been in his place I would have done the same thing. I would have condemned something, and as the engine was the most convenient, why not rip into it, although you have bought and paid us for 57 of this size, and this is the first one that you have reported. Please investigate this matter, and if we are at fault in any way, put it on to us in the straightest manner. The success of your light depends much on the men that are in charge of it. The success of the combination of Dynamos and Engine has been well proved at Pawnee N. J. where they have been running since Jan. last, and loaded to their full capacity, and no expense was dynamo or engine has yet occurred, although one engine ran one year at H. K. & F. B. Chambers before going to Pawnee

Respectfully Yours
 G. C. Sims Supt.

Engine 1883-11-20
ARMINGTON & SIMS CO.,
PROVIDENCE, R. I., U. S. A.

HENRY HOWARD, President,
PARSON ARMINGTON, Treasurer,
G. C. SIMS, Superintending,
C. T. HOWARD, Secretary.

PROVIDENCE, R. I., Nov. 26, 1883.

WORKS

334 HIGH STREET.

ans
Thomas A. Edison, Esq.,
New York City, N.Y.
Dear Sir,

We yesterday shipped
for your account Engine No. 31 - $7\frac{1}{2} \times 12\frac{1}{2}$ to
W. D. Rich, Mount Carmel, Pa. and today
have shipped Engine No. 32 - $8\frac{1}{2} \times 10$ - to
Edison Electric Illuminating Co. Shamokin, Pa.
We have forwarded bills of lading to
the above parties and herewith enclose
bills amounting to \$775. which we
trust may be found correct and
satisfactory.

Yours very truly,
Armington & Sims Engine Co.,
per Andrew

Engine
ARMINGTON & SIMS Co.,

1883-11-21

PROVIDENCE, R. I., U. S. A.

HENRY HOWARD, President,
PARSON ARMINGTON, Treasurer,
G. C. SIMS, Superintendent,
C. T. HOWARD, Secretary.

WORKS

PROVIDENCE, R. I., *Nov. 21* 1883

158 HIGH STREET.
Thomas A. Edison, Esq.,
New York City
Dear Sir,

Your telegram of this date has been received, and as we were uncertain whether you wanted a 9 1/2 x 12 Engine with pulley the standard size and face, or only a pulley to place upon an engine which you already have, we telegraphed you as follows: "Do you want engine or pulley? We can ship immediately." Enclosed please find your telegram as received by us. We await your reply, and will either engine or pulley as desired, at once. The engine ordered for Bellefonte, Pa. will go forward on Monday next.

Yours very truly
Armington & Sims Engineers
for Providence

Form No. 1.

1883-11-20

THE WESTERN UNION TELEGRAPH COMPANY.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHICK
297	Carlson		831

Received at **852 BROADWAY.** *Nov 21 1883.*

Dated *Providence R. I. 21*
 To *Mr. A. Edison*

*As you want Engine or
 fully we can ship immediately
 Armstrong & Sons*

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

1883-11-22



HENRY HOWARD, President,
PARDON ARMINGTON, Treasurer,
GARDNER C. SIMS, Superintendent,
CHARLES T. HOWARD, Secretary.

WORKS
AT
516 HIGH STREET.

PROVIDENCE, R. I., *November 22* 1883.

Thomas A. Edison Esq.
No. 65 Fifth Ave. New York City.
Dear Sir,

Your favor of the 21st inst. has been received and we carefully note its contents. We sincerely regret that there should be so much, or indeed, any trouble with the Engine at Champlain and will do our best to remedy it. We have sent a competent man to look into the difficulty and if the regulator is in fault he will see that it is corrected. We trust all may be speedily arranged to your satisfaction as well as our own. Meanwhile we remain

Yours very truly,
Armington & Sims Engine Works
per. Andrew

Engine
ARMINGTON & SIMS CO.

1883-11-24

PROVIDENCE, R. I., U. S. A.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendant.
C. T. HOWARD, Secretary.

PROVIDENCE, R. I., Nov. 24 1883.

WORKS
155 HIGH STREET.

Thomas A. Edison Esq.
New York City N.Y.
Dear Sir.

Your telegram of
this date has been received, reading as follows
"Alter Newburgh Engine and ship to
Crouch Street." This attention shall
have our first attention in the coming
week and the Engine will be sent to
Crouch Street as soon as possible.

The 9 1/2 x 12 Engine for Bellefonte Pa.
will be shipped on Monday the 26th inst.

Yours very truly
Armington & Sims Engine Co.
per Andrew

1883-11-24

Providence R. I.
Nov. 24th. 1883

Dear Sam.

Sick again, and at home. Will be out Monday. Frank Amington has just called with your dispatch asking for Central Station Engine in ten days. You shall have it, as your Newburg engine is finished and I can take out the shaft and put in shafts that will connect with your large dynamos. We have another $14\frac{1}{2} \times 13$ about finished and could ship it to our advantage, much better than we can change the Newburg engine. I can to day, certainly promise you the second engine on time, provided we do not have any slip up. Think it over, and if I can have my way, I can give you both engines on time. Can you give me some idea of your future business, as we are full of orders, and would refuse large Mill engines until we can enlarge again as I am now buying more tools. You will remember that our $14\frac{1}{2} \times 13$ shafts to connect

1883-11-24

to your Central Station dynamos, is a special one, and good for no other purpose. To day, we have two on hand, finished, and as it takes 60 days to get, and finish them, you will govern yourself accordingly. I am willing to order, finish, and hold them for you, to suit your convenience. Sam. Mc. Edin is right about our regulating, and it does not follow, that because the speed is greater the regulator is to be made lighter. I have written Mr. Moore to go to Steamship and find out what he can about the engines. We have a good man there, and cannot afford to have our engines unsatisfactory. Write me all you can about them. I should value the opinion of Sir Thomas.

I hope to see you off, for home, and would like to go with you, but cannot. Believe me

Sincerely Yours
Sims

Mr. Moore will come on about Tuesday I think. Please see him



WORKS
346 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
&
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-11-25

PROVIDENCE, R. I. Nov. 25 1883.

Dear Sam

14 1/2 x 13 for Duxbury is
now on foundation and after testing
will be shipped to Houghton Pa.
Our next engine is so far along
that you can have it in time.
Do not return to us 8 1/2 x 10 from
Shawmut but send it to Duxbury
and save expense. 9 1/2 x 12 for
Bellfonte will be shipped on
Monday as you requested.

Sincerely Yours
G. C. Sims

Sam. why not come down for one
day and look us over ~~for~~
before you go home. Come

ARMINGTON & SIMS Co.,

RECEIVED
PROVIDENCE, R. I., U. S. A.
NOV 27 1883
ANSWERED

HENRY HOWARD, President.
FARSON ARMINGTON, Treasurer.
G. C. SIMS, Superintendent.
C. T. HOWARD, Secretary.

WORKS

PROVIDENCE, R. I., Nov. 26 1883.

547 HIGH STREET

Thomas A. Edison, Esq.
New York City, N.Y.
Dear Sir,

Your Order No. 465 for "One
Key for crank of 9 1/2 x 12 Engine for Sandburg Pa."
is received. We write to inquire more particularly
concerning just what you wish, that there may
be no disappointment when the key is received.
There is a key to the driving pulley also to the regu-
lator pulley also to each of the two disks.
Which one shall we send? Again, we cannot send
a key all fitted. The best that we can do is to
send a forging for a key and leave the fitting to
be done by some machinist near the engine.
Please advise us. We enclose bill for Engine
No. 33, and remain

Yours very truly,
Armington & Sims Engine Co.
per. Charles

1883-11-26



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I. Nov. 26th 1883

Thomas A. Edison Esq.

Dear Sir

To change our running engine will require
new shaft, connecting rods, regulator, and
valve arms. We can finish and ship back
the engine Saturday night. What kind of
exhaust pipe will you have. We have three
same as Central Station on hand, and for
starting valve what shall it be. We now
use double threads on our starting valves and
the time of opening or closing is reduced
one half. Our present valves should be sufficient
for fitting at South St.

Respectfully Yours

G. C. Sims Esq.

Enclosed find bill for 9/2x12 shipshape this
day to Fall River Pa. via N.Y. & E. R. R.

1883-11-30



WORKS
AT
516 HIGH STREET

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I. Nov. 30th 1883

Samuel Ingers Eng.

Dear Sir

Your letter received. We will put any pulley
we have, on 8 1/2 x 10 Rockler ^{engine}, and will send
one man if you so order. Try and use same
pulley we have, and save expense of pattern. I
will send Shamokin letter, by Mr. Moore. Your
14 1/2 x 13 Central Station ^{engine} will be finished Saturday but
may not be able to ship it. We built & Hunter
-giving day and evening, while I did not think
of when I set the time.

Refuse for each man from
Lawrence. I hear that your goods men have been
discharged, and replaced by our engineer at \$1.75
per day. If it is so, your dynamo and our engine
will have a hard time. Will \$1.75 buy brains
enough to properly care for \$20,000 worth of property

Sincerely Yours
Sims

Form No. 1.

1883-11-30

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or omissions in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
787	Rph	M	314

Received at **852 BROADWAY.** *Nov* 1883.

Dated Providence R.I. 23
 To Paul Insull 65-5 Ave
 Not possible will try and ship
 engine Monday
 Arrington + Sims Eng Co

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

Form No. 1.

1883-12-01

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or omissions in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
342	Rph	42	1

Received at **852 BROADWAY.** *Dec* 1 1883

Dated Providence R.I.
 To Tho A Edison
 65-5 Ave NY
 Have worked day & night on engine
 & will continue cannot do
 more will be shipped Monday
 Arrington + Sims Eng Co

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.



WORKS
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-12-03
PROVIDENCE, R. I., Dec. 3 1883

Thomas A. Edison Esq.

Dear Sir

We can make 48" pulley and put
on new regulator. We can bring
pulley and regulators from Rochester
and give you credit for them, and
send them to New York to be built
as extra parts for repairs. Cost about
\$60. It is hardly possible that the
engine is large enough for the
work you require. Make the frame
of pulley as narrow as possible

Respectfully Yours

Sims

1883-12-03



WORKS
AT
545 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
H. C. CRANSTON, ASST. TREASURER.
GARDINER C. SIMS, SUPERINTENDENT.
"CHARLES T. HOWARD," SECRETARY.

PROVIDENCE, R. I., Dec. 3, 1883.

Samuel Insull Esq.
New York City.
Dear Sir,

Your telegram of this date received, reading as follows: "Our note thirty-six hundred due tomorrow. Where is it payable? Who will present it?" The note passed out of our hands some time ago, and your telegram came too late for us to make any inquiry concerning the party who will probably present it. This we will do tomorrow, soon after nine o'clock, and will telegraph to you at once, all that we can learn about it.

Yours very truly
Geo. Andrews.

Sincerely,
Sey.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-12-03

PROVIDENCE, R. I. Dec. 3d. 1883

Thomas A. Edison Esq.

Dear Sir
Enclosed find bill. and $\frac{1}{4}$ for $14\frac{1}{2} \times 13$ Centric
Station Engine shipped this day. Not a moment
has been lost on it since your order was re-
ceived. This fine is same as engine sent to Centric
Station on Pearl St. We now have on hand
one shaft for this style of engine. As you
could not allow us to test here, we would like
to send our man to start the engine, and hope
you will not allow any person to try it. By so
doing you will save much time, and we are
aware you succeed. Your $14\frac{1}{2} \times 13$ for Hamilton Pa.
is now being made and will be shipped in the morning
as you directed. We thank you for 9×12 order and
will ship this week. Enclosed find pair of indicator
cards, from $14\frac{1}{2} \times 13$ Hamilton Pa. engine.

Respectfully Yours

G. C. Sims Esq.

Form No. 1.

1883-12-04

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHARGE
157	C. H. Solale		1179

Received at **852 BROADWAY.**

Dec. 4 1888.

Dated Providence R. I.
To Saml Insull 65 5 am

Note today at importers &
Traders Bank for Collection
Armington & Sons
Engl

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

Form No. 1.

1883-12-04

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHARGE
39	Lyk 1022		846

Received at **852 BROADWAY.**

Dec 4 1888.

Dated Providence R. I.
To H. A. Edison 65 5 am

Will make necessary change
in pulley for about sixty
dollars.

Armington & Sons Engl
Dec 4 1888

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

1883-12-04



HENRY HOWARD, President.
 PARDON ARMINGTON, Treasurer.
 GARDNER C. SIMS, Superintendent.
 CHARLES T. HOWARD, Secretary.

WORKS
 AT
 516 HIGH STREET.

PROVIDENCE, R. I., December 4 1883

Samuel Inman Esq.,
 New York City.

Dear Sir,

Your favor of 3rd inst. with enclosure has been received, and contents have our attention. We herewith return to you all the invoices properly receipted and thank you for the settlement. We also enclose herewith bill of items Oct. 27th & 29th which we doubt you will find to be correct. We think that we are justly entitled to the amount of bill rendered Nov. 3rd - \$9.47 - from the fact that the engine was allowed to get filled with water, hence the trouble and landing of the key. You will readily see that this was no fault of the engine or ourselves. With regard to the engine sent to Sharon, you will please notice that, as yet, we have sent no bill for expense of man etc., and we supposed the engine was ordered in good faith and we shipped it in equal confidence. We trust that you will kindly reconsider the subject and pay us with a check for its value. Thank you again and remain Yours very truly,
 The Armingtons

1883-12-05



HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

WORKS
516 HIGH STREET.

PROVIDENCE, R. I., December 5 1883

Thomas A. Edison, Esq.
New York City

Dear Sir,

Herewith to you, below,
Memorandum of the Discount on the last two Notes received
from you, which in trust may prove correct and satis-
fying.

Yours very truly,
Thos. Andrew
Sims.

Memorandum of Discounts Decem. 4, 1883.

Note - Nov. 12, 1883 - 3 mos. - due Feb. 15, 1884 - \$3781.43

Discount 73 days @ 6% - \$46.01

Note - Nov. 25, 1883 - 3 mos. - due Feb. 28, 1884 - \$3781.43

Discount 86 days @ 6% - \$54.70

\$100.21.

P. A. E. 21.90

Interest 78.31
100.21

1883-12-05



HENRY HOWARD, President.
 PARDON ARMINGTON, Treasurer.
 GARDNER C. SIMS, Superintendent.
 CHARLES T. HOWARD, Secretary.

WORKS
 516 HIGH STREET.

PROVIDENCE, R. I.

Dec 5th 1883

James H. Edwards Esq.
 65 Fifth Ave N.Y.
 Dear Sir

Your order Nov. 30th for
 9 1/2 x 12 engines to be shipped to Piqua
 O. came to hand this morning &
 will have immediate attention
 shipping the engines about 20th
 Smith has orders on his books
 for 9 engines of this size and the
 last one he sent you he states
 and in order to fill the order at the
 time above mentioned it will be
 necessary to start this one the ques-
 tion now is which do you need
 first this engine or the one ordered
 for Middleston O. It seems prompt
 delivery of engines you should give us
 in order anticipating your wants
 otherwise there would be delay in deliv-
 ery. Yours truly
 J. H. Edwards



HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
GARDNER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

[Handwritten signature]

1883-12-06

PROVIDENCE, R. I., Dec. 6th 1883.

Samuel Insull Esq.

Dear Sir

We sent you bill for repairs on Booklet engine because the damage done was no fault of ours. We will send our men again tomorrow night to put in new connecting rod bolts. Now who will pay the bill? Whenever our engines get stuck up you will always find us ready to put them in order as soon as possible. neither we get our pay or not. I can mention several of your engines that cannot amake up, on account of incompetent engineers. We will put them in order again but should not do it at our expense. You should order the following extra parts for single engines

- | | |
|------------------------|--------------------------|
| 1 Pa. Crank Pin Bolts | Extra Piston Rod Packing |
| 1 " Cross Head " " | " Oil Cup Blanks |
| 1 " Regulation Springs | " Cyl. Oil Cup Blanks |
| Connecting Rod Bolts | " Cross Head Key |

Respectfully Yours

G. C. Sims

1883-12-06



HENRY HOWARD, President.
 PARDON ARMINGTON, Treasurer.
 GARDINER C. SIMS, Superintendent.
 CHARLES T. HOWARD, Secretary.

WORKS
 525 HIGH STREET.

PROVIDENCE, R. I.,

Dec 6th 1883

Thomas A. Edison Esq. Dept
 No 65 Fifth Ave N.Y.

Your favor of 5th relative
 to engine ship to Shamokin is
 at hand and in reply would say
 the engine was built & finished
 on order No. 370 to be shipped to
 Newburg and upon receipt of your
 telegram to ship an engine of that
 size to Shamokin it was necessary
 to work night and day at Shamokin
 able extra expenses to us to complete
 it in time I do not think you
 should ask us to have it shipped
 back here but that you should
 order it shipped to Newburg to free
 that order Please let me hear
 from you

Yours Respectfully
 M. J. Munn



WORKS
OF
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
H. C. CRANSTON, ASST. TREASURER.
GARDINER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

PROVIDENCE, R. I. Dec. 6, 1883.

Thomas A. Edison, Esq.
New York City.
Dear Sir,

We herewith enclose
bill and bill of lading for Engine
No. 36-14 1/2 x 13 - sent to Hagler, Pa.
this day. We have also forwarded
a duplicate bill of lading to W. D. Rich,
Left. and trust all may prove to
be correct and satisfactory.

Yours very truly,
Thos. Andrews.
Secy.



WORKS
OF
546 HIGH STREET.

HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
H. C. CRANSTON, ASST. TREASURER.
GARDINER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

PROVIDENCE, R. I. Dec. 8, 1883.

Thomas A. Edison.
Construction Department
New York City.
Dear Sir,

Your favor of the 7th
mit has been received, and contents have
our attention. In accordance with
your request, we have to-day sent a
trav. after the Shamokin engine, and
have ordered it returned to us.

Yours very truly,
Thos. Andrews.
Secy.

1883-12-08

RECEIVED
DEC 10 1883
ANSWERED

FILE NO. 183
DEC 8 1883



HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
H. C. CRANSTON, ASST. TREASURER.
GARDNER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

1883-12-14

PROVIDENCE, R. I., *Decem. 14* 1883.

*Thomas A. Edison, Esq.,
New York City.*
Dear Sir,

We have this day shipped
per to the Edison Machine Works, 104
Brook St. New York, Engine No. 37-9 1/2 x 12,
which we hope may arrive safely and
prove satisfactory. We herewith enclose
bill and bill of lading and remain,
Yours very truly,
Thos. Andrews

Sciy



HENRY HOWARD, PRESIDENT.
PARDON ARMINGTON, TREASURER.
H. C. CRANSTON, ASST. TREASURER.
GARDNER C. SIMS, SUPERINTENDENT.
CHARLES T. HOWARD, SECRETARY.

1883-12-15

PROVIDENCE, R. I., *Decem. 15* 1883.

*Thomas A. Edison, Esq.,
New York City.*
Dear Sir,

We send tonight by
boat Engine No. 37-9 1/2 x 12, directed to
the Edison Machine Works, 104 Brook St.
New York, which we hope may be received
in good order and prove satisfactory to
you. Enclosed herewith please
find bill and bill of lading of the
same.

*Yours very truly,
Thos. Andrews,
Sciy*

1883-12-18



WORKS

546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I. Dec. 18th. 1883

Thomas A. Edison Esq.

Dear Sir

Your letter received. We have changed pattern of $14\frac{1}{2} \times 13$ starting valve, so that flange for 5" steam pipe can be used. This is much better for your work. Our valves on hand will be bored out as you request, for 5" pipes. Order No. 501 was for $9\frac{1}{2} \times 12$ engine to be shipped to Middletown Ohio. Our number was 1562. Your number was 37. Shipped to Edison Machine Works Dec. 14th. Order No. 498 was for $9\frac{1}{2} \times 12$ engine to be shipped to Piquette Ohio. Our number was 1563. Your number was 38. Shipped to Edison Machine Works Dec. 15th. You have our lists. We have to dig in our books, orders for 46 engines. Please send us shipping directions, and time of delivery for engines you have ordered, so that there will be no delay when you want them. We now have 100 more and are obliged to make over-
times.

1283-12-18



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President,
PARDON ARMINGTON, Treasurer,
GARDNER C. SIMS, Superintendent,
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., ... 188.....

Boilers are, or should be finished, before they are filled with water to be tested. If the cold water test is applied and a leak appears it is caulked and made tight. As steam pressure is put on, many small leaks may appear. In many cases they "take up" and disappear. If they do not, they are caulked while the pressure is low. If it is high, the caulkings are very moderate, for should the defect be a broken rivet, it might fly out and the result be serious. It is not safe to hammer a boiler when pressure is on. Your book is not wholly in error on this subject. An explanation was required, however.

Lack of the valve is correct.

Size, and make of engine, time, and number of revolutions per minute govern the amount. I should be pleased to talk with you on this subject, and answer any questions that I can.

Respectfully Yours
G. C. Sims

1883-12-21



WORKS
516 HIGH STREET.

HENRY HOWARD, President.
PARSON ARMINGTON, Treasurer.
GARINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., Dec. 21st. 1883.

A. D. Taite Esq.

Dear Sir

I met "Sir Thomas" at Fall River Monday.
It is his intention to use our $9\frac{1}{2} \times 12$ engine
in place of $8\frac{1}{2} \times 10$. He expects to be in New York
Sunday morning and will then decide what
pulleys he will use. No changes will be made
with engines or pulleys at Brooklyn or Fall
River until we receive the decision of "Sir Thomas".
We standard pulleys for $9\frac{1}{2} \times 12$ engines, made
for your first dynamo, and from your order, are
47" diameter. Regulator pulley has 8" face. Driving
pulley 10 1/2" face. We have another regulator pulley
pattern for this engine 37 1/4" diameter 8 1/2" face. We are
now making regulator and driving pulley pattern
52" diameter, but cannot decide on width of face
until we hear from the Mill Agents that give
us the order. Speed of $9\frac{1}{2} \times 12$ 275 revolutions.
No objection to 280. We hope this last size
52" together with our other patterns will be
what you require. If so, say what face of

1883-12-21



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDINER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

PROVIDENCE, R. I., ... 188.....

^{your} perhaps, overbuilt like, and we will furnish them on
all future orders. $9\frac{1}{2} \times 12$ engines, without extra charge
has number for $14\frac{1}{2} \times 13$ Hasleton engine was
1886. Your number was 36. Was shipped Dec.
6th. We entered your order Nov. 24 as directed
by your letter of that date. We do not find
any number with your order. We will however
look again and see if it can be found.

Connecting rod straps
or other parts of engines, are not required. You
should however, have extra crank pin, and cross
heads boxes. The life of the box depends much on
the engine. Some men buy them safe, as in
Lombard, and Worcester R.I. say they, while
others, say let Fifth Ave. R.I. say they do not
touch them for miles, and months, and they will
last for years. In one instance we have an $13\frac{1}{2} \times 30$
engine 120 revolutions 200 H.P. run 13 months without
moving the key, to key up the boxes. The engine is
now 5 years old, and the boxes are good for
five more. An engine that has run 100,000 or



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President,
PARDON ARMINGTON, Treasurer,
GARDINER C. SIMS, Superintendent,
CHARLES T. HOWARD, Secretary.

1883-12-21

PROVIDENCE, R. I., ... 188.....

other slow speed engines. that do not have compression in the cylinder to relieve the crank pin, and our heads pin, at each end of the strokes. must necessarily lay up the bars to prevent pounding. but with our engine it should not be done. See back on the Richards Steam Engine Indication by Charles J. Patin Eng. on compression pages 165. Read carefully on page 166 when he says "the link motion" &c.

If you will visit us, we will prove all of this, and show you that the engine will run silent with its heads, leaving the connecting rods bars loose.

Respectfully Yours
G. C. Sims Supt.

Yours, etc.,

Form No. 1.

1883-12-22

THE WESTERN UNION TELEGRAPH COMPANY.

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THIS IS AN UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GILMAN, President.

NUMBER	SENT BY	REC'D BY	CHECK
756 Co. Am	13	Collect	1/30/86
Received at 852 BROADWAY.			
Dated Providence R.I. 22			
To Thomas A. Edison			
65 - Save my			
Your note due twenty			
fifth at importers &			
Traders Bank for collection			
Armington & Ames Co			

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRE.



WORKS
AT
546 HIGH STREET.

HENRY HOWARD, President.
PARDON ARMINGTON, Treasurer.
GARDNER C. SIMS, Superintendent.
CHARLES T. HOWARD, Secretary.

1883-12-28

✓ PROVIDENCE, R. I., Dec. 28, 1883

Thos. A. Edison, Esq.

65 Fifth Ave. New York.

Dear Sir:

✓ Your order No. 704 for 9 1-2 x 12

Engine, 57-in. pulley, 9-in. face, to run 275 per minute; and
order for two 14 1-2 x 13 Engines, 66-inch pulley, to run 286
per minute, with extra crank pin boxes for each Engine, received;
also extra crank pin boxes for 8 x 10, 14 1-2 x 13 Fall River.

- ✓ 9 1-2 x 12 Pequa, Ohio.
- ✓ 9 1-2 x 12 Middletown, Ohio.
- ✓ 9 1-2 x 12 Bellefonte, Pa.
- ✓ 9 1-2 x 12 Mount Carmel, Pa.
- ✓ 14 1-2 x 13 Tiffin, Ohio.

These orders shall have our immediate attention and ship
as soon as possible, part of them going to-day.

Yours truly,

G. C. Sims, Supt.

1000

Is that all right?

14-1-4-13 Tiffin, Carol
9-1-2-12 Mount Carmel, Pa.
9-1-2-11 Bellefonte, Pa.
9-1-2-10 Middleburg, Ohio
9-1-1-9 Poplar, Ohio

"Please order. I will pay out immediate attention and ship

...as possible, part of them going today.

No 9	14 1/2 x 13	Feb 9	83	✓	Genoa Italy
No. 10	8 1/2 x 10	Jan 31	83	✓	England
" 11	14 1/2 x 13	Feb 6	"	✓	Genoa Italy
" 12	14 1/2 x 13	" 12	"	✓	England
" 13	8 1/2 x 10	" 19	"	"	"
" 14	8 1/2 x 10	" 22	"	✓	"
" 15	8 1/2 x 10	" 24	"	✓	"

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31- Milan	2
Gino Co	1
"	1
"	1

1883. Electric Light - Babcock & Wilcox (D-83-023)

This folder contains correspondence, agreements, and other documents relating to Edison's dealings with Babcock & Wilcox, manufacturer of boilers for Edison central stations. Much of the correspondence is by Nat W. Pratt, treasurer of the company.

Approximately 60 percent of the documents have been filmed. The following categories of documents have not been filmed: routine correspondence regarding shipping instructions and unpaid bills; orders; receipts.

1883-04-11

*Yerth, Babcock, & Wilcox,
L. Wilcox, T. Frost*

*Nat. W. Pratt, Treas.
E. H. Russell, Secy.*

BABCOCK & WILCOX CO.
WATER TUBE STEAM BOILERS.

60 Carondelet St.
New Orleans.

48 N. Canal St.
Chicago.

50 River St.
Boston.

NO. 30 PORTLAND ST.

**NEW YORK
AND
GLASGOW.**

116 James St.
Glasgow.

405 Mission St.
San Francisco.

301 N. 5th St.
Philadelphia.

New York, April 11, 1883.

Thomas A. Edison,
65 Fifth ave. N. Y. city.
Dear Sir:

We are in receipt of your favor of April 10th.
in relation to personal arrangement between yourself and the
Babcock & Wilcox Co.

Your understanding from what Mr. Insull reported of our con-
versation is entirely correct, but that you may have copy, we will
repeat it: On all boilers ordered by you personally, we are to
allow a draw back of 50 cents per H-P, quoting the same prices
as those given to the Edison Electric Light Co; it being understood
by the above that this draw back is not made on boilers ordered by
any of the other Edison Companies, but solely for boilers for which
we have your personal order.

The terms of payment to be as follows: 25 per cent with
order, 50 per cent 30 days from date of shipment (you to notify
us when you want the boilers shipped) and 25 per cent 60 days
from date of shipment.

Hoping this is clear and satisfactory, we are
Yours very truly,

The Babcock & Wilcox Co.

Nat. W. Pratt, Jr.

P. S. Enclosed we hand you two copies of the Edison regular
list, which is 5 per cent below our regular list.

[ENCLOSURE]

REGULAR SIZES OF BABCOCK & WILCOX WATER-TUBE BOILERS.

Horse-Power.	SECTIONS.				DRUMS, 2-10 PLASER END.		WEIGHT.	SPACE OCCUPIED.			No. of BRICK.		Nipples or DRUMS.		SAFETY VALVE.		FURNACE.				NEW YORK PRICE.	Horse-Power.	GLASGOW PRICE.			
	No. of Tubes high.	ft. long.	No. of Tubes low.	ft. long.	Length. ft. in.	Diameter.		Long. ft. in.	Wide. ft. in.	High. ft. in.	Inch.	Feet.	Opening. ft. in.	Flange. ft. in.	No. used.	Size. in.	STAY OPENING. ft. in.	Wide. in.	Long. ft. in.	Sq. feet Grate Surface.						
IN ONE FURNACE.																										
46	4	7	14	1	30	14 5/8	14,850	19	0	5	6	13	9	10,400	1,500	3 1/2	9	1	3	3 1/2	32	6	0	18.00	1196.80	46
51	4	8	14	1	30	14 5/8	17,400	19	0	5	6	13	9	11,050	1,400	3 1/2	9	1	3	3 1/2	32	6	0	16.00	1267.30	51
51	4	8	14	1	30	14 5/8	17,400	19	0	6	1	13	9	11,500	1,700	3 1/2	9	1	3	3 1/2	39	6	0	16.50	1418.40	51
73	6	7	16	1	30	16 5/8	22,325	21	5	6	8	13	9	12,300	1,800	4	10	1	3 1/2	4	46	6	0	22.98	1571.30	73
82	6	8	16	1	30	16 5/8	23,575	21	5	6	8	13	9	12,500	1,825	4	10	1	3 1/2	4	46	6	0	24.89	1720.50	82
92	6	9	16	1	30	16 5/8	24,650	21	5	6	8	13	9	12,800	1,850	4	10	1	3 1/2	4	46	7	0	26.81	1859.70	92
104	6	9	18	1	36	18 5/8	26,925	23	5	6	8	13	9	13,100	1,900	5	11	1	4	5	46	7	0	28.81	2114.30	104
120	7	9	18	1	36	18 7/8	29,400	23	5	7	3	13	9	13,400	1,975	5	11	1	4	5	53	7	0	30.94	2479.70	120
122	8	8	18	1	36	18 7/8	30,550	23	5	7	10	13	9	13,600	2,000	5	11	1	4	5	60	7	0	35.00	2545.50	122
136	8	9	18	1	36	18 7/8	31,900	23	5	7	10	13	9	13,700	2,000	5	11	1	4	5	60	7	0	35.00	2730.25	136
146	12	7	16	2	30	16 5/8	38,925	21	5	10	2	14	3	15,400	2,000	4	10	2	3 1/2	6	88	6	0	43.98	2826.25	146
164	8	16	2	30	16 5/8		40,200	21	5	10	2	14	3	16,000	2,500	4	10	2	3 1/2	6	88	6	0	47.73	2981.10	164
184	12	9	16	2	30	16 5/8	43,225	21	5	10	2	14	3	16,200	2,600	4	10	2	3 1/2	6	88	7	0	51.31	3249.90	184
208	12	9	18	2	36	18 7/8	47,175	23	5	10	2	14	3	16,400	2,675	5	11	2	4	8	88	7	0	51.31	3609.05	208
240	14	9	18	2	36	18 7/8	59,075	23	5	11	4	14	3	16,500	2,850	5	11	2	4	8	102	7	0	59.50	3967.15	240
IN TWO FURNACES.																										
90	8	7	14	2	30	14 5/8	31,475	19	0	9	7	13	9	15,400	2,900	3 1/2	9	2	3	3 1/2	32	6	0	16.00	2298.10	90
102	8	8	14	2	30	14 5/8	32,175	19	0	9	7	13	9	16,200	3,100	3 1/2	9	2	3	3 1/2	32	6	0	16.00	2398.05	102
122	8	8	14	2	30	14 5/8	36,000	19	0	10	9	13	9	16,700	3,300	3 1/2	9	2	3	3 1/2	39	6	0	19.50	2674.90	122
146	12	7	16	2	30	16 5/8	40,625	21	5	11	11	13	9	18,000	3,600	4	10	2	3 1/2	4	46	6	0	22.98	2964.90	146
164	12	8	16	2	30	16 5/8	42,600	21	5	11	11	13	9	18,500	3,650	4	10	2	3 1/2	4	46	6	0	24.89	3111.25	164
184	12	9	16	2	30	16 5/8	45,600	21	5	11	11	13	9	19,000	3,700	4	10	2	3 1/2	4	46	7	0	26.81	3372.90	184
208	12	9	18	2	36	18 7/8	50,150	23	5	11	11	13	9	20,000	3,800	5	11	2	4	5	46	7	0	28.81	3739.60	208
240	14	9	18	2	36	18 7/8	55,375	23	5	13	1	13	9	21,000	3,950	5	11	2	4	5	53	7	0	30.94	4159.10	240
272	16	8	18	2	36	18 7/8	58,075	23	5	14	3	13	9	22,000	4,000	5	11	2	4	5	60	7	0	35.00	4322.50	272
324	7	18	2	36	18 7/8		60,875	23	5	14	3	13	9	22,500	4,100	5	11	2	4	5	60	7	0	35.00	4602.75	324
328	24	7	4	30	16 5/8		76,625	21	5	19	6	14	3	24,000	4,000	4	10	4	3 1/2	6	88	6	0	43.98	5174.20	328
328	24	7	4	30	16 5/8		79,675	21	5	19	6	14	3	25,000	4,000	4	10	4	3 1/2	6	88	6	0	47.73	5391.40	328
368	24	9	10	4	30	16 5/8	84,850	21	5	19	6	14	3	25,500	5,350	4	10	4	3 1/2	6	88	7	0	51.31	6390.40	368
416	24	9	18	4	36	18 7/8	92,525	23	5	19	6	14	3	26,000	5,850	5	11	4	4	8	88	7	0	51.31	7055.60	416
480	26	9	18	4	36	18 7/8	104,800	23	5	21	10	14	3	28,500	5,700	5	11	4	4	8	102	7	0	59.50	7877.20	480

sent to J. A. Elliott April 11, 1883
Private & Confidential

THE BABCOCK & WILCOX CO., 30 Cortlandt Street, New York, and 107 Hope Street, Glasgow.

(1893)

IN ONE FURNACE.

IN TWO FURNACES.

Private & Confidential.

Order to O. A. Edison, April 11, 1883.

Greenwich, N.Y. Post.
L. H. Wilson, V. Post.

1883-04-24

Atty. W. Pratt, Trans.
E. H. Bennett, Prob.



Samuel Insull,
65 Fifth ave. N. Y.
Dear Sir:

We have MR. Edison's letter of the 10th which we answered on the 11th. Are we to understand that the two letters form a contract between us. We should know this definitely so that we can be sure on how we shall quote prices.

Yours very truly,

The Babcock & Wilcox Co.

W. M. Pratt Jr.

not a contract but an
understanding.

1883-05-07

*Genl. H. Babcock, Pres.
J. Wilson, V. Pres.*

*Nat. W. Pratt, Treas.
E. H. Bennett, Secy.*



*67 Bayou La Pte.
New Orleans
48 St. Louis St.
Chicago*

*50 River St.
Boston*

NO. 38 PORTLAND ST.

*116 James St.
Chicago*

*575 Mission St.
San Francisco
32 N. 5th St.
Philadelphia*

New York, May 7, 1883.

Mr. Thomas A. Edison,
65 Fifth ave. N. Y.

Dear Sir:

We have your favors of May 7.
Glad to see that you will favor us by looking up the account
against the Edison Machine works.

We note your second favor of the 7th, in which you say that
your understanding is that the correspondence passed between the
writer and Mr. Edison forms a contract between you and him, in con-
nection with any order for boilers that he may be able to place.
This certainly is our side of the contract. Mr. Edison's side of
the contract should be a note, stating for this consideration he
places our boilers with every job that goes out. Such a note will
close the affair, as we believe that is the understanding, but of
course it is better to have it on record.

Enclosed we hand you our specification for 146 H-P boiler,
in two furnaces, either one of which can be run independent of
the other. You will notice we have put no name on the specifica-
tion as we thought you might wish to fill it out and hand it in as
a bid.

Glad to see you have such good prospects for business and
should think that this method of handling it would be the best of
any devised.

There will be no difficulty in our man's superintending the
brick-work. They are men able to do that, so that there would
be no necessity of Mr. Woodruff's going out to see about it, unless
you gave him the job of doing the brick-work.

Yours very truly,

The Babcock & Wilcox Co.

Nat. W. Pratt

CO. MOORE & MOORE ATT.
REFERENCE MADE TO SUBSTANTIAL

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[illegible]

Mar 7. 1893

Geo. H. Babcock, Pres.
J. Wilcox, V. Pres.

1883-05-15

Wm. H. Pratt, Treas.
E. H. Bennett, Sec.



66 Bayou La B. La.
New Orleans

48 Richmond St.
Chicago

50 River St.
Boston

NEW YORK
AND
GLASGOW

116 James St.
Glasgow

555 Mission St.
San Francisco

32 N 5th St.
Philadelphia

New York May 15, 1883

Mr. T. A. Edison,
65 Fifth ave. N. Y.

Dear Sir:

We have been approached by Mess. Copp Bros. & Barry, Machinists and Iron Founders, etc., Hamilton, Ont. who would like to build our boilers for the Dominion of Canada. Mr. Barry spoke of having made arrangement with you for the purpose of introducing your lights and electric plants into Canada. Would you kindly furnish us with any information that you may have of the amount of work they do & their responsibility and greatly oblige us.

We beg to intimate that our last letter of May 7th to you, in regard to special contract on boilers has not been answered.

Yours very truly,

The Babcock & Wilcox Co.

RECEIVED
MAY 16 1883
ANSWERED

Wm. H. Pratt

.....188...
FILE No.....

24
 The undersigned do hereby certify that the above named party is the owner of the property described in the foregoing certificate and that the same is not subject to any lien or claim of any person other than the said party.

WATER TUBE STEAM BOILERS.
JOHN B. COOK & WILSON
 NO. 30 PORTLAND ST.
NEW YORK AND GLASGOW.

67 Broadway, N.Y.
 48 Richmond St., Chicago.
 50 Oliver St., Boston.
 116 James St., Glasgow.
 22, N. 5th St., Philadelphia.
 100 Harrison St., San Francisco.

New York May 24, 1883.

To A. E. Smith,
 New York.

Dear Sir:

We have your unanswered favors of the 21st, 22nd and 23rd. Please accept thanks for yours of the 21st, closing contract between us. We think this now is thoroughly understood.

Note what you say about the list of names to be changed between us, and that Mr. Masley has charge of it. Will communicate with him further. We hope to get our first list out in the next few days. We will then endeavor to get all parties in time. Will write you further in regard to it before that time, to show you in what way it is proposed to place the names so it will be understood by all parties, and the amount of new work and alterations contemplated by the parties named.

Enclosed we hand you one of our regular price-lists from which you understand the Edison Co. receives five per cent. as special discounting the 25 cents per HP being a second consideration for orders as per our contract with you.

Very truly yours,

The Edison & Smith Co.

RECEIVED
 MAY 25 1883
 ANSWERED

JOHN B. COOK & WILSON
 30 PORTLAND ST.
 NEW YORK
 116 JAMES ST.
 GLASGOW

*Geo. H. Babcock, Pres.
T. Wilcox, V. Pres.*

1883-06-06

*Nat. W. Pratt, Treas.
E. H. Bennett, Secy.*



*60 Broadway, N.Y.
New Orleans*

*48 E. Canal St.
Chicago*

*50 Oliver St.
Boston*

NEW YORK

GLASGOW

*116 James St.
Havre*

*555 Mission St.
San Francisco*

*32 N. 5th St.
Philadelphia*

New York, June 6, 1883.

T. A. Edison,
65 Fifth ave. N. Y.

Dear Sir:

We enclose you specifications for a single 51 HP and a pair of 73's, two furnaces, one battery, corresponding to the orders in your favor of the 5th inst.

Will you be kind enough to fill out the enclosed orders with shipping directions, etc. and return them as soon as possible.

Thanking you for the orders we are

Yours very truly,

The Babcock & Wilcox Co.

Wm. H. Martin

[ENCLOSURE]

SPECIFICATION
FOR CONTRACT.

Babcock & Wilcox Boiler



Of - 51 - Horse Power

FOR
Thos. A. Edison Esq.
65 Fifth Ave
N.Y.

The BABCOCK & WILCOX CO.,

107 HOPE STREET,

GLASGOW,

Scotland.

30 CORTLAND STREET,

NEW YORK

U. S. A.

Branch Offices:

30 Oliver St., Boston, Mass.
15 Wall Building, Syracuse, N. Y.
35 N. Fifth St., Philadelphia, Pa.
21 Fourth Ave., Pittsburgh, Pa.
45 Church St. Cor. Bldg. Baltimore
48 South Canal St., Chicago, Ill.
60 Canal St., New Orleans, La.
502 Mission St., San Francisco, Cal.
30 San Jacinto, Havana, Cuba.

*Specs. H. Dubouché, Dist.
J. Wilson, & Dist.*

*Nat. W. Potts, Trans.
E. H. Bennett, Secs.*

THE BABCOCK & WILCOX CO.

WATER-TUBE & FLANGE BOILERS.

NO. 38 PORTLAND ST. NEW YORK AND GLASGOW.

66 Broadway, N.Y.
48 Canal St., Chicago.
15 West Building, Syracuse.
45 Chamber of Commerce Bldg., Baltimore.

50 Oliver St., Boston.
91 2nd Ave., Pittsburgh.

107 Hope St., Glasgow.

305 Mission St., San Francisco.
33 N. 5th St., Philadelphia.

San Ignacio, N. G. P., Havana, Cuba.
New York, June 6th 1890

For and in consideration of the hereafter-named amount we propose to furnish

To Thos. A. Edison Esq.

65 5th Ave N.Y. City

-57- HORSE POWER BOILER.

(H.P. = 30 lbs. of water evaporated from 212° at 70 lbs. pressure.)

As per the following

SPECIFICATION.

There ~~is~~ to be / boiler, arranged to be set in / batter 4.

NUMBER and
ARRANGEMENT.

SECTIONS.

Headers.

Joints.
Connections.

DRUM.

Manhole.

MUD-DRUM.
Blow-off.

This boiler to be composed of 4 sections or slabs, each section to be composed of 8 best lap-welded wrought iron tubes, four (4) inches in diameter, and 12 feet long, connected at the ends by continuous staggered headers, or "up-takes" and "down-takes;" the tubes to be fastened therein by being expanded into tapered holes. Each "header" to be provided with handholes placed opposite the end of each tube, of sufficient size to permit the cleaning, removal and renewal of a tube through the same. Each handhole provided with a cap fastened with wrought iron bolt and clamp and cap nut. All joints being made tight without packing of any kind. The several sections to be connected at each end to 30" steam and water-drum, and at one end with a mud-drum, by means of lap-welded wrought-iron tubes, four (4) inches in diameter and of suitable length, expanded into bored holes.

The steam and water drum to be 30 inches in diameter and 12 feet long, made of Flange Iron 1/4 inches thick, in three sheets; the longitudinal seams double riveted; the heads turned in lathe, and rivet holes drilled. To have a manhole in rear head, with faced joint, and two nozzles, one for safety valve and one for taking off steam, 3 1/2 inches diameter with 7 inch flange, faced and drilled.

The mud-drum to be of cast iron, 12 inches diameter and 32 inches long, with 1 hand-hole and 1 nozzle for blow-off pipe, 2 inches diameter.

SUPPORTS.

This boiler to be suspended from two wrought iron compound beams, resting on 4 wrought iron columns, with cast iron bases and caps, properly fastened so that the boiler shall be supported entirely independent of the brick work, and free to expand or contract without affecting the same, and so that the brick work may be removed and replaced, if required, without disturbing the boiler or connections.

VALVES and FITTINGS.**Safety Valve.**

This boiler to be provided with 1 safety valve 3 inches diameter, set to blow at 90 lbs. (unless otherwise ordered).

Steam Gauge.

One steam gauge, twelve and one-half inches diameter, dial mounted on ornamental stand,

Water Gauge.

One stand pipe, with large sized glass water gauge, fitted with independent cleaning pipes and valves, and three patent gauge-cocks with lifting handles;

Feed Valve.

One check valve, $1\frac{1}{2}$ inches diameter,

One stop valve, $1\frac{1}{2}$ inches diameter,

Blow-off Valve.

One blow-off valve, 2 inches diameter,

Cleaning Valve.

One stop valve, $\frac{3}{4}$ inch diameter,

Piping.

The necessary pipes and fittings for fixing all the above to the boilers.

FRONT.

The front to be of cast iron, full width and height, ornamental pattern, containing 1 fire door with register / double ash pit doors, and large door for access to the ends of the tubes; corners to return around brick work nine inches. All parts to be ample in strength, joints fitted by planing.

FIXTURES.

The fixtures for *this boiler* to consist of a full set of grate bars with bearers, *for coal*

dead plate and girders, flame bridge plates with bolts, and special fire brick for lining the flame bridges; bridge wall girders and bars, binders and bolts, 2 ash and 5 cleaning doors for access to the exterior of tubes, and the flues for cleaning, one damper with frame, and the requisite I and T bars for openings in walls; smoke chamber T's and anchor bolts for front.

TOOLS.

/ Steel wrench fitting the handhole nuts, / tube scraper with handle, / set of fire tools, consisting of poker, slice bar and hoe, and hose and pipe for blowing dust from exterior of tubes, to be furnished.

TESTING.

The sections and mud-drum to be tested and made tight under a hydraulic pressure of 300 lbs. per square inch, and the steam and water drum to be tested and made tight under a hydraulic pressure of 150 lbs. per square inch.

QUALITY.

All materials and workmanship to be first-class in every particular.

WEIGHT.

Approximate weight 17,400 lbs.

SPACE.

Space occupied including brickwork 19' long 5'6" wide 12' high (to top of steam opening).

ERECTING.

Full drawings and directions for erecting to be furnished, and services of man to do mechanical work and superintend erection, board and traveling expenses to be paid by purchaser.

DELIVERY.

The boiler to be delivered f. o. b. in New York.

PRICE.

For the sum of *Thirteen hundred & thirty four*
(\$1334.00) Dollars

TERMS.

One-half payable on presentation of sight draft with shipping receipt. Balance in 60 days from shipment. Foreign and mining shipments on presentation of bill of lading.

LIMIT.

This proposal will be void unless accepted before *Aug 6* 188*3*

The Babcock & Wilcox Co.

W. J. Martin

[ENCLOSURE]

Date of order.....

To be delivered.....

In ordering, please fill up the following form ; detach, take press copy and return to us.

Yours,

THE BABCOCK & WILCOX COMPANY.

[PRINTED IN COPYING INK.]

SPECIFICATION
FOR CONTRACT.

Babcock & Wilcox Boiler



Of - 146 - Horse Power

FOR

J. A. Edison Esq
65 5th Ave
N.Y.

The BABCOCK & WILCOX CO.,

107 HOPE STREET,
GLASGOW.

30 CORTLAND STREET,
NEW YORK
U.S.A.

Branch Offices:

at Oliver St., Boston, Mass.
at White Building, Syracuse, N. Y.
at 217 1/2 St., Philadelphia, Pa.
at Frank Ave., Pittsburgh, Pa.
at Clark & Co. Bldg., St. Louis, Mo.
at 100 Broadway, New Orleans, La.
at 100 Main St., New Brunswick, N. J.
at 100 Main St., New York, N. Y.
at 100 Main St., New York, N. Y.

*Geo. H. Babcock, Pres.
J. Wilcox, V. Pres.*

*Robt. H. Smith, Treas.
Edw. Bennett, Secy.*

BABCOCK & WILCOX CO.
WATER-TUBE STEAM BOILERS.

NO. 30 CORTLAND ST.

NEW YORK
AND
GLASGOW.

at Bay View, N. Y.
New Orleans.
48 Tebennel St.
Chicago.
15 White Building,
Pittsburgh.
45 Chamber Commerce Bldg., Baltimore.

at 110 Madison St.
San Francisco.
at 107 1/2 St.
Hague.
at 107 1/2 St.
Hague.
at 107 1/2 St.
Hague.

New York, June 6, 1890

For and in consideration of the hereafter-named amount we propose
to furnish

To *Thos. A. Edison Esq*

65 5th Ave N.Y. City

146 - HORSE POWER BOILER.

(H.P. - 50 lbs. of water evaporated from 212° at 70 lbs. pressure.)

As per the following

SPECIFICATION.

There are to be 2 boilers, arranged to be set in / boiler 9.

NUMBER and
ARRANGEMENT.

SECTIONS.

Each boiler to be composed of 6 sections or slabs,
each section to be composed of 7 best lap-welded wrought iron
tubes, four (4) inches in diameter, and 16 feet long, connected at
the ends by continuous staggered headers, or "up-takes" and "down-
takes;" the tubes to be fastened therein by being expanded into tapered
holes. Each "header" to be provided with handholes placed opposite
the end of each tube, of sufficient size to permit the cleaning, removal
and renewal of a tube without the use of a cap. Each handhole provided
with a cap fastened with wrought iron bolt and clamp and cap nut.
All joints being made tight without packing of any kind. The several
sections to be connected at each end to 1/2" steam and water-drum,
and at one end with a mud-drum, by means of lap-welded wrought-
iron tubes, four (4) inches in diameter and of suitable length, expanded
into bored holes.

Headers

Joists.
Connection.

DRUM.

The steam and water drums to be 30 inches in diameter and
16 feet long, made of Flange Iron 3/4 inches thick, in three sheets; the
longitudinal seams double riveted; the heads turned in lathe, and
rivet holes drilled. To have a manhole in rear head, with faced
joint, and two nozzles, one for safety valve and one for taking off
steam, 4 inches diameter with 10 inch flange, faced and drilled.

Drums to be fitted with surface blow-off

Manhole.

MUD-DRUM.
Blow-off.

The mud-drum to be of cast iron, 12 inches diameter and 46
inches long, with 1 hand-hole and 1 nozzle for blow-off pipe,
2 inches diameter.

SUPPORTS.

The Boilers to be suspended from two wrought iron compound beams, resting on 4 wrought iron columns, with cast iron bases and caps, properly fastened so that the boilerS shall be supported entirely independent of the brick work, and free to expand or contract without affecting the same, and so that the brick work may be removed and replaced, if required, without disturbing the boilerS or connections.

VALVES and FITTINGS.**Safety Valve.**

Each boiler to be provided with 1 safety valve $3\frac{1}{2}$ inches diameter, set to blow at 90 lbs. (unless otherwise ordered).

Steam Gauge.

One steam gauge, twelve and one-half inches diameter, dial mounted on ornamental stand.

Water Gauge.

One stand pipe, with large sized glass water gauge, fitted with independent cleaning pipes and valves, and three patent gauge-cocks with lifting handles;

Feed Valves.

One check valve, $\frac{1}{4}$ inches diameter,

One stop valve, $1\frac{1}{4}$ inches diameter,

Blow-off Valve.

One blow-off valve, 2 inches diameter,

Cleaning Valve.

One stop valve, $\frac{3}{4}$ inch diameter,

Piping.

The necessary pipes and fittings for fixing all the above to the boilers.
One stop valve for surface blow-off -

FRONT.

The front to be of cast iron, full width and height, ornamental pattern, containing 2 fire doorS with register 2 double ash pit doors, and large doorS for access to the ends of the tubes; corners to turn around brick work nine inches. All parts to be ample in strength. joints fitted by planing.

FIXTURES.

The fixtures for *each* boiler to consist of a full set of grate bars with bearers, *for coal*

dead plate and girders, flame bridge plates with bolts, and special fire brick for lining the flame bridges; bridge wall girders and bars, binders and bolts, 2 ash and 5 cleaning doors for access to the exterior of tubes, and the flues for cleaning, one damper with frame, and the requisite I and T bars for openings in walls; smoke chamber T's and anchor bolts for front.

TOOLS.	/ Steel wrench fitting the handhole nuts, / tube scraper with handle, / set of fire tools, consisting of poker, slice bar and hoe, and hose and pipe for blowing dust from exterior of tubes, to be furnished.
TESTING.	The sections and mud-drum S to be tested and made tight under a hydraulic pressure of 300 lbs. per square inch, and the steam and water drums to be tested and made tight under a hydraulic pressure of 150 lbs. per square inch.
QUALITY.	All materials and workmanship to be first-class in every particular.
WEIGHT.	Approximate weight 40625 lbs.
SPACE.	Space occupied including brickwork 21' 6" long 11' 11" wide 12' high (to top of steam opening).
ERECTING.	Full drawings and directions for erecting to be furnished, and services of man to do mechanical work and superintend erection, board and traveling expenses to be paid by purchaser.
DELIVERY.	The boiler S to be delivered f. o. b. in New York.
PRICE.	For the sum of <i>Thirty one hundred & two⁰⁰ / 100⁰⁰</i> <i>Dollars</i>
TERMS.	One-half payable on presentation of sight draft with shipping receipt. Balance in 60 days from shipment. Foreign and mining shipments on presentation of bill of lading.
LIMIT.	This proposal will be void unless accepted before <i>Aug 6th 1883</i>

The Babcock & Wilcox Co.

M. J. Machine

TOOLS. / Steel wrench fitting the handhole nuts, / tube scraper with handle, / set of fire tools, consisting of poker, slice bar and hoe, and hose and pipe for blowing dust from exterior of tubes, to be furnished.

TESTING. The sections and mud-drum S to be tested and made tight under a hydraulic pressure of 300 lbs. per square inch, and the steam and water drums to be tested and made tight under a hydraulic pressure of 150 lbs. per square inch.

QUALITY. All materials and workmanship to be first-class in every particular.

WEIGHT. Approximate weight 40625 lbs.

SPACE. Space occupied including brickwork 21' 6" long 11' 11" wide 12' high (to top of steam opening).

ERECTING. Full drawings and directions for erecting to be furnished, and services of man to do mechanical work and superintend erection, board and traveling expenses to be paid by purchaser.

DELIVERY. The boiler S to be delivered f. o. b. in New York.

PRICE. For the sum of *Fifty one hundred & two⁰⁰ (\$ 3,02⁰⁰)*
Dollars

TERMS. One-half payable on presentation of sight draft with shipping receipt. Balance in 60 days from shipment. Foreign and mining shipments on presentation of bill of lading.

LIMIT. This proposal will be void unless accepted before *Aug 6th 1883*

The Babcock & Wilcox Co.

M. J. Martin

[ENCLOSURE]

Date of order.....

To be delivered.....

In ordering, please fill up the following form; detach, take press copy and return to us.

Yours,

THE BABCOCK & WILCOX COMPANY.

[PRINTED IN COPYING INK.]

Genl. M. Babcock, Pres.
J. Wilson, V. Pres.

1883-26-07

And W. Pratt, Treas.
C. M. Bennett, Secy.

BABCOCK & WILCOX CO.
WATER-TUBE STEAM-BOILERS.

66 Broadway, N. Y.
New Orleans

NO. 30
30 Oliver St.
Boston

PORTLAND ST.
NEW YORK

GLASGOW

116 James St.
Haven

655 Union St.
New Brunswick

32 N. 5th St.
Philadelphia

New York, June 7, 1883.

Thomas A. Edison

85 Fifth St. New York.

Dear Sir:

Please accept thanks for copies of tests. They will be of great value to us. Blue copies were sent in last night's mail. Think you must have them by this time.

Yours very truly,

The Babcock & Wilcox Co.

W. A. Pratt

Thomas A. Edison

85 Fifth St. New York.

Dear Sir:

Please accept thanks for copies of tests. They will be of great value to us. Blue copies were sent in last night's mail. Think you must have them by this time.

*Genl. M. Ambrose, Pres.
T. Wilson, T. Pres.*

1883-06-07

*Wm. H. Pratt, Treas.
E. H. Bennett, Secy.*



*60 Broadway, N.Y.
New Orleans*

*48 E. Canal St.
Chicago*

*50 Oliver St.
Boston*

*105 Nassau St.
San Francisco*

*22 N. 5th St.
Philadelphia*

*116 James St.
Hullington*

T. A. Edison,
65 Fifth ave. N. Y.

New York, June 7, 1883.

Dear Sir:

Enclosed we hand you specification to correspond with your order No. 15, for a pair of 73 HP boilers, to go to Shamokin, Pa. This will be known on our list as job 418. Please sign the enclosed order and return to us, giving shipping directions, if possible; also as soon as possible the date when you want to ship it, as we do not like to build up a large amount of stock and carry it on hand and we are so pushed that we do not want to build immediately, unless it is for early delivery. The indication of these points in future orders will facilitate business.

Thanking you for your order, we are
Yours very truly,

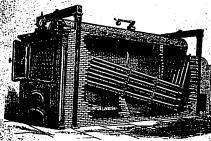
The Babcock & Wilcox Co.

Wm. H. Pratt

*Received
June 10, 1883
T. A. Edison
65 Fifth Ave.
N. Y.*

**SPECIFICATION
FOR CONTRACT.**

Babcock & Wilcox Boiler



05 - 146 - Horse Power

FOR

Thos. A. Edison Esq.
65 5th Ave
N.Y. City

The BABCOCK & WILCOX CO.,

107 HOPE STREET,
GLASGOW, Scotland. NEW YORK
NEW YORK, U.S.A.

Branch Offices:

30 Oliver St., Boston, Mass.
41 White Building, Syracuse, N. Y.
31 N. Fifth St., Philadelphia, Pa.
Fourth Ave., Pittsburgh, Pa.
41 Church of Com. Bldg., Baltimore.
40 South Canal St., Chicago, Ill.
40 Broadway, New York, N.Y.
40 Broadway, New York, N.Y.
40 Broadway, New York, N.Y.
40 Broadway, New York, N.Y.

*Genl. M. Babcock, Pres.
J. Wilcox, V. Pres.*

*Actg. M. Pratt, Treas.
E. H. Bennett, Secy.*

THE BABCOCK & WILCOX CO.
WATER-TUBE STEAM BOILERS.

44 Broadway, N.Y.
48 Federal St., Boston.
18 White Building, Chicago.
45 Chambers Commerce, N.Y.
30 Oliver St., Boston.
91 4th Ave., Pittsburgh.
107 Hope St., Chicago.
320 N. 3rd St., Philadelphia.
San Francisco, N.Y.
New York, June 7, 1883

- Feb. 4/8 -

For and in consideration of the hereafter-named amount we propose to furnish

To *Thos. A. Edison Esq. for Shantokin, Pa.*
65 5th Ave N.Y. City

- 146 - HORSE POWER BOILER.

(12-1. - 30 lbs. of water evaporated from 212° at 70 lbs. pressure.)

As per the following

SPECIFICATION.

There are to be 2 boilers, arranged to be set in 1 battery.

**NUMBER and
ARRANGEMENT.**

SECTIONS.

Each boiler to be composed of 6 sections or slabs, each section to be composed of 7 best lap-welded wrought iron tubes, four (4) inches in diameter, and 16 feet long, connected at the ends by continuous staggered headers, or "up-takes" and "down-takes;" the tubes to be fastened therein by being expanded into tapered holes. Each "header" to be provided with handholes placed opposite the end of each tube, of sufficient size to permit the cleaning, removal and renewal of a tube through the same. Each handhole provided with a cap fastened with wrought iron ball and clamp and cap nut. All joints being made tight without packing of any kind. The several sections to be connected at each end to 1-30 steam and water-drum, and at one end with a mud-drum, by means of lap-welded wrought-iron tubes, four (4) inches in diameter and of suitable length, expanded into bored holes.

Headers

Joints.

Connections.

DRUM.

Manhole.

MUD-DRUM.

Blow-off.

The steam and water drums to be 30 inches in diameter and 16 feet long, made of Flange Iron 3/4 inches thick, in three sheets; the longitudinal seams double riveted; the heads turned in lathe, and rivet holes drilled. To have a manhole in rear head, with faced joint, and two nozzles, one for safety valve and one for taking off steam, 4 inches diameter with 10 inch flange, faced and drilled. Drums to be fitted with surface blow-offs -

The mud-drum to be of cast iron, 12 inches diameter and 46 inches long, with 1 hand-hole and 1 nozzle for blow-off pipe, 2 inches diameter.

SUPPORTS.

The boilers to be suspended from two wrought iron compound beams, resting on 4 wrought iron columns, with cast iron bases and caps, properly fastened so that the boilers shall be supported entirely independent of the brick work, and free to expand or contract without affecting the same, and so that the brick work may be removed and replaced, if required, without disturbing the boilers or connections.

**VALVES
and
FITTINGS.****Safety Valve.**

Each boiler to be provided with 1 safety valve $3\frac{1}{2}$ inches diameter, set to blow at 90 lbs. (unless otherwise ordered).

Steam Gauge.

One steam gauge, twelve and one-half inches diameter, dial mounted on ornamental stand,

Water Gauge.

One stand pipe, with large sized glass water gauge, fitted with independent cleaning pipes and valves, and three patent gauge-cocks with lifting handles;

Feed Valves.

One check valve, $1\frac{1}{2}$ inches diameter,

One stop valve, $1\frac{1}{2}$ inches diameter,

One blow-off valve, 2 inches diameter,

Cleaning Valve.

One stop valve, $\frac{1}{4}$ inch diameter,

Piping.

The necessary pipes and fittings for fixing all the above to the boilers.
One surface blow-off valve -

FRONT.

The front to be of cast iron, full width and height, ornamental pattern, containing 2 fire doors with register 2 double ash pit doors, and large doors for access to the ends of the tubes; corners to turn around brick work nine inches. All parts to be ample in strength, joints fitted by planing.

FIXTURES.

The fixtures for *each* boiler to consist of a full set of grate bars with bearers, *for coal*

dead plate and girders, flame bridge plates with bolts, and special fire brick for lining the flame bridges; bridge wall girders and bars, binders and bolts, 2 ash and 5 cleaning doors for access to the exterior of tubes, and the flues for cleaning, one damper with frame, and the requisite I and T bars for openings in walls; smoke chamber T's and anchor bolts for front.

TOOLS.	/ Steel wrench fitting the handhole nuts, / tube scraper with handle, / set of fire tools, consisting of poker, slice bar and hoe, and hose and pipe for blowing dust from exterior of tubes, to be furnished.
TESTING.	The sections and mud-drum ^s to be tested and made tight under a hydraulic pressure of 300 lbs. per square inch, and the steam and water drum ^s to be tested and made tight under a hydraulic pressure of 150 lbs. per square inch.
QUALITY.	All materials and workmanship to be first-class in every particular.
WEIGHT.	Approximate weight 40.625 lbs.
SPACE.	Space occupied including brickwork 21' 5" long 11' 11" wide 12' high (to top of steam opening).
ERECTING.	Full drawings and directions for erecting to be furnished, and services of man to do mechanical work and superintend erection, board and traveling expenses to be paid by purchaser.
DELIVERY.	The boiler ^s to be delivered f. o. b. in New York.
PRICE.	For the sum of <i>Thirty one hundred & two (43102.22) Dollars</i>
TERMS.	One-half payable on presentation of sight draft with shipping receipt. Balance in 60 days from shipment. Foreign and mining shipments on presentation of bill of lading.
LIMIT.	This proposal will be void unless accepted before <i>August 1883</i>

The Babcock & Wilcox Co.

M. J. Mortimer

[ENCLOSURE]

Date of order.....

To be delivered.....

In ordering, please fill up the following form; detach, take press copy and return to us.

Yours,

THE BABCOCK & WILCOX COMPANY.

[PRINTED IN COPYING INK.]

Address all Communications to the Company. 1883-06-20

The Babcock & Wilcox Co.

Patent Water-Tube Steam Boilers,

30 Cortlandt Street,

New York,

June 20th 1883

Chas. Campbell

65-57th Ave N.Y.C.

Dear Sir

We can place 756 II of our
boilers in the space you spoke
of leaving a little more than 36"
passage way by one side of the
boilers as per enclosed sketch
which shows space occupied
by one battery. The intention
being to place two such batteries
facing each other.

Yours truly
The Babcock & Wilcox Co.
Wm. H. Hall

Address all Communications to the Company.

1883-06-29

The Babcock & Wilcox Co.
Patent Water-Tube Steam Boilers,
30 Cortlandt Street,

New York, June 29 1883

Thos A Edison

60 5th Ave Dear Sir

We can send a
man to Shamokin the
latter part of next week.
At present all of our
men are out. Hoping
this will be satisfactory
We remain

The Babcock & Wilcox Co.

R.

1883-06-29

THE BABCOCK & WILCOX CO.
PATENT WATER-TUBE STEAM BOILERS,
30 CORTLANDT STREET,
NEW YORK.

I would like to see what
you might be able to do in this
Business. Can do in this
New York, June 29, 1883

J. A. Edison, Esq.
65 Fifth Ave, N.Y.

Dear Sir -

You will remember
I placed a boiler in the Fair (Boston)
last year for running the Edison Lamp.
The Fair Committee have
not treated us quite right, and are trying
to fit it so that we shall leave it
there the coming year without compensation.

We have a chance to sell
it - in fact it is sold - Could
you bring any influence to bear to
secure their retention of the boiler?

We think if you should say in
pretty strong language that you
wished your lights to be run by
our boilers it would have the desired
effect. We know they would have to purchase
another boiler if they didn't pay for one.
a prompt letter to this effect would greatly
help. Very truly, The Babcock & Wilcox Co.

*Geo. H. Babcock, Pres.
S. Milner, V. Pres.*

1883-07-06

*Wm. H. Pratt, Treas.
C. H. Bennett, Sec.*



NO. 30 NASSAU ST.

*48 St. Canal St.
Chicago.*

*50 River St.
Boston.*

NEW YORK.

*116 James St.
Glasgow.*

*32 N. 5th St.
Philadelphia.*

New York, July 6, 1883.

T A. Edison, Esq.
65 Fifth Ave.
New York,

Dear Sir:-

We are very much obliged to you for the interest you have taken in the matter of retaining the boiler for the Boston Fair and hope your letter will accomplish its purpose. Our Boston Agent writes that there is considerable probability of their keeping it.

Yours Very Truly

The Babcock & Wilcox Co.

1883-a8-08

Address all Communications to The Company.

The Babcock & Wilcox Co.
Patent Water-Tube Steam Boilers,
30 Cortlandt Street,

New York, Aug 8th 1883

Thos A Edison

65 5th Ave. Dear Sir

We have shipped
to W.D. Rich
Brookton Mass

2. Surface Blow fans

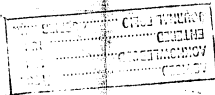
1. Side clearing door latch.

The second payment on
these boilers was due 6th inst

Please remit \$3494.00

and oblige. Yours truly

The Babcock & Wilcox Co.
R.



Geo. H. Babcock, Pres.
T. Wilcox, V. Pres.

1883-08-24

Wm. W. Bull, Treas.
E. H. Bennett, Sec.

THE BABCOCK & WILCOX CO.
WATER-TUBE STEAM BOILERS
NO. 80 PORTLAND ST.
NEW YORK AND GLASGOW

60 Broadway, N.Y.
New Orleans
48 So. Canal St.
Chicago
15 White Building
Sydney
45 Chamber of Commerce Bldg.
Baltimore

50 Oliver St.
Boston
19 4th Ave.
Pittsburgh

375 Mission St.
San Francisco
116 James St.
Hingham
32 N 3rd St.
Philadelphia

New York, Aug. 24, 1883

T. A. Edison, Esq.
65 Fifth Ave. N.Y.

Dear Sir:-

Your two favors of the 23rd. inst. came duly to hand. We take note of what you say, and will in future advise you of any application we may receive, as regards prices of boilers from any company connected with you.

In regard to the Edison Electric Co. of Lawrence we received their first order through our Boston house in Sep'r 1882. The framing was for 122 H.P. and the boiler ordered was half of the above, erected in such a manner to allow at a later time the placing of a second one at the side of it.

We understand the matter perfectly and are prepared to fill your order, for which, please accept our thanks.

We enclose you a blank order which please fill out, giving the shipping directions &c. and time to be delivered.

Yours Very Truly

The Babcock & Wilcox Co.

J. W. Keen

Order #201

FILE NO. **W**

WHEELER, BABCOOK & WILCOX CO.
WATER-TUBE & STEAM-BOILERS

45 Chamber of Commerce Bldg., Baltimore

Sep. 7, 1883

65.5th. ave., N.Y. Dear Sir: Have received a copy of contract between yourself and the Anaconia Brass & Copper Co. As a meeting of the board is to be held on Wednesday of next week we do not feel disposed to take the responsibility of acting upon the matter. In relation to the boilers already ordered by you under the present contract at the time the contract was made the understanding with Mr. Inshull was that if from any unforeseen circumstances you were unable to meet payments you should give us satisfactory notes bearing interest. We would suggest that you send us two notes covering all amounts due up to date, one for 30 and one for 60 days, upon receipt of which we shall be pleased to ship the boiler now on hand. As we do all our buying on a cash basis we find it absolutely necessary to adhere to cash payments in making sales, and we think you will see the necessity of our asking for this arrangement.

The Babcock & Wilcox Co.

2014 2014

~~K & Wilcox Co.~~

1883-09-07

BRANCH OFFICES.

CHICAGO,
621 S. Canal St.
BOSTON,
50 Oliver St.
PHILADELPHIA,
37 N. 2^d St.
PITTSBURGH,
11 S. 4th Avenue

Geo. W. Babcock & Co.
J. Wilson & Co.



Geo. W. Babcock & Co.
J. Wilson & Co.

BRANCH OFFICES.

NEW ORLEANS,
61 Carondelet St.
SAN FRANCISCO,
315 Mission St.
HAVANA, CUBA,
61 San Ignacio

RECEIVED

SEP 7 1883

ANSWERED

FILE NO. 1883 3

New York, Sept. 7, 1883

Mrs. A. Edlison Esq
64 Fifth Ave.

Dear Sir: In reply to yours of 7th would say, that the Lawrence boiler has not been shipped, as we have not yet received the copy of proposed new contract which you was to send us, and under which you wished this boiler to come. The boiler is already shipped - and is waiting for either the fulfilling of the terms under which it was ordered, or our acceptance of the proposed new terms.

Very Truly Yours
Geo. W. Babcock
Pres.

02572 Oct 8

1532 211

~~The American~~

8th September 1883



One 700000

to the order of The Bank of America & Co

Twenty seven hundred and 700000

of the United States

Value received



I promise to pay to

700000 Dollars

New York City

No One 11th Dec 1883

Thos A Edison

1883-09-08

Geo. H. Babcock, Pres.
T. Wilson, V. Pres.

Wm. H. Pratt, Treas.
E. H. Bennett, Sec.

RECEIVED
SEPT 11 1883
LANS

BABCOCK & WILCOX CO.

WATER TUBE STEAM BOILERS.

131 No.
at Providence, R.I.
New Orleans.

NO. 38

PORTLAND ST.

755 Mission St.
San Francisco.

48 Canal St.
Chicago.

50 Oliver St.
Boston.

116 James St.
Glasgow.

32 1/2 St.
Philadelphia.

15 White Building
Syracuse.

49 1/2 Ave.
Birmingham.

**NEW YORK
AND
GLASGOW.**

45 Chambers Commerce Bldg. Baltimore.

Sept 8, 1883

T A Edison, Esq

New York

Dear Sir:- Yours of the 8th. with notes enclosed
just to hand for which please accept our thanks, enclosed we hand
you receipt for the same.

It will be impossible to get the Lawrence boiler off
today, but it will go on Monday. It is necessary to give one
days notice to get a locomotive into the yard to ship it by, other
wise it would go today.

Yours Very Truly

The Babcock & Wilcox Co.

Wm. H. Pratt

1283-c9-c8

Address all Communications to the Company

The Babcock & Wilcox Co.

SEP 10

Latent Water-Tube Steam Boilers

SEP 10/83

30 Cortlandt Street,

FILE NO.

New York

Sept 8th

1883

Thos A Edison
65 5th Ave Dear Sir:

The invoice that
in filling out the two
notes you have neglected
to insert with interest
Also that you have
not included the last
payment on Brooklyn
boilers \$718.48 due Sept
5th The whole amt should
have been \$222.70 Please
correct and return.

Yours truly

The Babcock & Wilcox Co.

1883-09-08

THE BABCOCK & WILCOX CO., ROCHESTER, N.Y.

Builders of Patent Boilers and Steam Boilers

No. 30 Canal Street,

*Recd
Sep 8
File*

New York, N.Y. Sept 8 1883

Charles C. Edwards Esq

65 West 4th St

Canton, N.Y.

Dear Sir:

Please accept our

acknowledgements for your favorable receipt of my invoice of

covering *210 lbs. of iron pipe 1 in. dia. 12 ft. long*

and at *20 cts. per lb. 42.00*

which I have credited your acct.

Very respectfully,
Yours Truly,

The Babcock & Wilcox Co.

243511

487a 22

J. H. Smith

1883-09-10

Address all Communications to the Company.

The Babcock & Wilcox Co.
Patent Water-Tube Steam Boilers,
30 Cortlandt Street,

New York,

Sept. 10th 1883

Mr Edison

65 5th Ave.

Dear Sir

Yours with note
at 1 + 2 months for 2794⁵⁵
each, with interest is rec'd
Thanking you for same
in return

Yours truly
The Babcock & Wilcox Co.
R.

Oct 11th 1883-10-11
1883
Charge Interest Account and
Credit Balcock 3rd & Ilcox 15.37
Interest on Note 2794.35.

Paid today.

John A. Walsh

1883-10-30

Address all Communications to the Company.

The Babcock & Wilcox Co.

Patent Water-Tube Steam Boilers,
30 Cortlandt Street,New York, Oct 30 1883

J A Edison

65 5th Ave Dear Sir

We are always ready to make good any shortcomings on our part, but should much prefer to have you mention when ordering new material, if you expect us to furnish it free of charge. We are of the impression that we were directed by telephone to furnish the same bar for Brighton as was used in the Bennett Building.

Yours truly
The Babcock & Wilcox Co. R.

1883-11-21

Address all Communications to the Company.

The Babcock & Wilcox Co.

Patent Water-Tube Steam Boilers,
30 Cortlandt Street,New York, Nov 21st 1883

J A Edison

65 5th Ave We have forwarded 3 Expansion Rolls to W.D. Rich, Pitts. Ohio. & also send 3 to 65 5th Ave. We also return the ones you sent us as we fail to find any defect in them. Ours all splinter at the end in the same manner but we turn them over until the other end cracks also.

Yours truly,
The Babcock & Wilcox Co.
R.

1883-11-24

*Genl. M. Phelps, Wash.
T. Wilson, Wash.*

*Wm. H. Pratt, Wash.
Wm. Bennett, Wash.*



*W. H. H. H. H. H.
New Orleans
St. Louis, Mo.
Chicago.*

*St. Louis, Mo.
Boston.*

*116 James St.
Hingham.*

*Wm. H. H. H. H.
San Francisco
St. Louis, Mo.
Philadelphia.*

T. A. Edison, Esq.

New York Nov 24, 1883

Construction Dept. 65 5th Ave. City.

Dear Sir:-

As per our interview of this morning with Mr. Insull
we will hereafter furnish the safety valves with a top outlet so
that your piping may be more direct.

Yours truly,

The Babcock & Wilcox Co.

Wm. H. H. H. H.

1883-12-20

The Babcock & Wilcox Co.,

PATENT WATER-TUBE STEAM BOILERS,

New England Office, 50 Oliver St. Boston.

R. M. Weston, Manager.

Boston, Dec. 20th 1883

Thomas A. Edison Esq.
65 Fifth Avenue,
New York.

Dear Sir,

Allow me to introduce
to you Lieut. Chas. A. Stone U.S.N. Mr Stone
is largely interested in Scientific Questions such
as Electricity and others - Any service or attention
you may give him will be greatly
appreciated by

Yours Very Resp^{ly}

R. M. Weston

COMPARATIVE BOILER TESTS

by

THE BABCOCK AND WILCOX COMPANY

and

THE JARVIS FURNACE COMPANY.

The tests were made at the laboratory of T. A. Edison, Menlo Park N. J. on a Babcock & Wilcox Sectional boiler, rated at 75 H. P. . There were 42 -4in. tubes 16 ft. long, in 6 tubes, 7 tubes high. Steam and water drum 30 in. diameter, and 16 ft. long

On June 13th and 14th the tests were made by C. P. Higgins, Esq. for the Babcock and Wilcox Co. These tests were with the ordinary boiler setting, the first test being with natural draft, and the fuel five parts anthracite slack to one part cumberland slack. The second test was with forced draft and reduced grate surface and the same fuel. In each test 200 lbs. of dry wood was used to start the fire and is assumed as equal to 100 lbs. of coal.

On July 19th and 20th J. Grant Esq. made the tests for the Jarvis Furnace Co. Both tests were made with the Jarvis Furnace setting and with natural draft. The fuel used July 19th contained five parts anthracite slack and one part cumberland slack.

July 20th three parts anthracite and one part cumberland.

Anthracite slack per ton	\$2.50
Cumberland " "	\$6.50

The Agents of both parties were present at all the tests, likewise J. L. Hornig Esq. in the interest of the Engineering Dept. of the Edison Electric Light Co.

RESULTS OF TESTS.

	Babcock & Wilcox Co. Ashcroft Grate.		Jarvis Furnace Co. Sheffield Grate.	
	June 13. Natural Draft.	June 14. Forced Draft.	July 19. Natural Draft.	July 20. Natural Draft.
Heating Surface. sq. ft.	840	840	840	840
Grate Surface. sq. ft.	26.5	18.85	26.5	26.5
Ratio of Heating to Grate Surface.	31.69:1	44.56:1	31.69:1	31.69:1
Fuel used (Cumberland Anthracite Slack.)	5:1	5:1	5:1	3:1
Duration of test. hours.	8.866	7.9	8.	8.5
Average Steam Pressure.	82.6	84	80.5	80.5
Average Temperature of Feed. °F.	67	185.37	70.3	68
Pounds of Coal burned.	1964	2868	2110	2502
Pounds of Refuse.	427	279	383	398
Pounds of Combustible.	1537	2589	1727	2104
Per cent. of Ash.	21.74	9.73	18.15	15.9
Coal burned per sq. ft. grate per hour.	8.35	19.26	9.95	11.10
Total Water Evaporated. lbs.	12792	20985	15789	18187
Water Evaporated per hr.	1442.0	2556.3	1983.6	2139.6
Water Evaporated per sq. ft. Heating Surface per hour.	1.717	3.162	2.349	2.547
Water Evaporated pr lb. Coal Actual Conditions.	6.51	7.31	7.48	7.27
Water Evaporated per lb. Coal from and at 212 °F.	7.72	7.77	8.85	8.61
Water Evaporated pr lb. Combustible Actual Condi- tions.	8.32	8.10	9.14	8.64
Water Evaporated per lb. Combustible from and at 212 °F.	9.86	8.61	10.81	10.23
Horse power developed from 212 °F. temp. of feed, and 70 lbs. pressure.	55.2	91.2	75.34	81.81
Per cent. below—above Rated Capacity.	-23.4	+21.6	+0.45	+9.1
Temp. of Boiler Room. °F.	76	73	76	77
Total cost of coal. \$	2.77	405	2.99	3.90
Water Evaporated for one dollar's worth of coal. lbs.	5477	5508	6247	5526

ECONOMY.

Saving, with the Jarvis Furnace in cost of Fuel for the same amount of water Evaporated.

June 13 vs. July 19	12.33 per cent.
" 14 " " 19	11.83 " "

Gain, with the Jarvis Furnace, in amount of water evaporated for the same cost of Fuel.

June 13 vs. July 19.	14.05 per cent.
" 14 " " 19	13.41 " "

CAPACITY.

June 13 vs. July 19.	36.48% in favor of Jarvis Furnace.
June 14 vs. " 19.	21.05% " " " Forced draft.
June 13 " June 14.	65.21% " " " " "
July 19 " July 20.	8.59% " " " Richer Fuel.

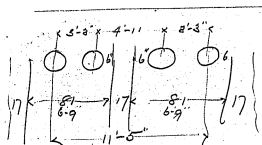
The per cent. of ashes shown under actual conditions varies considerably from what is usually found. According to numerous tests previously made in the same boiler and with mixed coal it should have been about ^{per cent} 17 [^] in June 13 and 14 and July 19th and 15 per cent in July 20.

Unfortunately the pyrometer did not register accurately the temperature of the fuel gases.

Calculations by J. Hornig.

To supersede previous reports.

Chas. L. Leake
THE ENGINEERING SOCIETY
MEMBER



St Louis Boiler

av. Babcock x Wilcox

$$\begin{array}{r}
 6.9 \\
 6.9 \\
 1.5 \\
 \hline
 2.10 \\
 17.9
 \end{array}$$

1883. Electric Light - Bergmann & Company (D-83-024)

This folder contains correspondence and other documents relating to the business of Bergmann & Company, New York City. The company produced electric lighting fixtures, sockets, and other devices used with the Edison system of electric lighting.

Approximately 30 percent of the documents have been filmed. The following categories of documents have not been filmed: routine correspondence relating to accounts, bills, orders, and shipments of goods; supplements to Bergmann & Company catalogs, including price lists and illustrations of lighting fixtures; duplicate copies of selected documents.

1883-01-02-Form H.

THOMAS A. EDISON,
Central Station, Construction Dep't.,
No. 65 FIFTH AVENUE,

New York, *Jan 2* 1883

Messrs. Bergmann & Co
292 Peter B.
City
Berlin

On Dec 7 we
sent order 577 for Tiffin Co.
will you kindly advise by
letter as to date of shipment
of Temporary fixtures called
for in that order and oblige

Yours etc.
T. A. Edison
Const. Dept.

December 20

[MISDATED. CORRECT DATE IS JANUARY 19, 1883]

E. Machine Works
BERGMANN & CO.,

108-114 WOOSTER STREET.

(BY APPOINTMENT.)

Bergmann & Co

MANUFACTURERS OF EDISON'S INVENTIONS,
EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY.

New York, Jan 19 1882
Mr S. Russell, Mount-
Dear Sir

Order #3101

is all complete - And the only
things lacking on #3100 are 500
sockets. These we will have fin-
ished this pm. and will have at
the Machine Works at 5.30 or
before today. We are very sorry
for the delay but it has only been
one of the sockets and shall not
occur in the future as we are
now able to turn them out very
fast.

Yours truly
Bergmann & Co

K

L. G. BERNHANN

Memorandum made by S. B. Eaton, President, January 21th, 1883, touching the question of granting an exclusive license to Bernmann & Co.

Shall the Light Co. grant an exclusive license to Bernmann & Co.? If so, what articles shall the license cover, and what compensation shall Bernmann pay to the Light Co.

That article is the proposed license to cover?

Answer, Switches, shade holders, brackets, chandeliers, drop lights, safety catches, cut outs, switches, meters, inter-ior junction boxes, and all other appliances used in the Edison system of lighting within the interior of a building, that is to say, used in connection with the current after it shall have left the service box in the street.

We suggest (if the contract is made) that Bernmann & Co. furnish a list of all the articles to be covered by the license, to be attached to the contract. Besides this, of course a general statement will be made in the body of the contract, of what the license covers.

Second. These patents and inventions is the contract to cover?

Answer, first, the inventions of Dr. Wilson, and all other patents belonging to the Light Co. Second, licenses secured by the Light Co. to use the inventions of others. \$10,000.

If this exclusive license, for the above inventions, is given to Bergmann & Co., the contract ought, reciprocally, to bind them not to grant any license whatever, without the consent of the Light Co. for any of the inventions or patents belonging to themselves or controlled by them. They should also be compelled by the contract to furnish licenses to the Light Co. for its licensees companies outside of the United States and within North and South America, free of all charges, provided such companies shall, generally, not take any manufacturing or sales beyond the such licenses, to the United States or any other country outside the several territories covered by such license companies.

What compensation are Bergmann & Co. to pay the Light Co. for this exclusive license? Bergmann & Co. shall pay to the Light Co. as all the compensation for this exclusive license, 5 per centum of the entire gross receipts of all their business. Should they manufacture other glasses or goods, outside of those covered by the contract, this royalty of 5 per centum is not to be calculated upon the sales of such goods. But for all

kinds of manufactured goods, of every sort covered by the contract, they will pay a royalty of 5 per centum, that is to say of 5 cents on every dollar of their entire gross sales, without any deductions whatever. Thus if their business, for gross sales, amount to \$500,000, they would pay the Light Co. \$25,000.

Regarding details, such as rendering monthly accounts of sales, allowing the Light Co. to inspect their books to verify such accounts, making the royalty payable upon the sales as they appear by their invoice book, without reference to goods being shipped back, and debts and other deductions, the Light Co. and the Bermannes Co. state that they are willing to submit to any reasonable requirements the Light Co. may think proper to impose.

It is also understood, that if all energy is provided such companies will be prevented from charging the orbitant prices.

I do not think we can grant an exclusive license without regulating the prices and without restricting the profits. Self interest in a broadcast might prevent an effective license from entering his business by too high prices. But we cannot safely trust to that. If we grant an exclusive license we must reserve the right and power to regulate and to limit profits. How can we do this in case of all kinds of goods, out-

(1) The easiest way, were it only practicable, would be for the price of each article to be fixed in advance in the contract. But that is impossible. As yet we do not even know

4
what articles are required, except to a limited extent; nor are the details of any one article finally determined; nor is the business of manufacturing the Edison Appliances either he regards the magnitude of the business or the perfection of machinery, sufficiently developed to afford a reasonable basis for fixing ultimate cost of manufacture.

(2) Another way would be to provide that the average profit, of all the goods covered by the contract, should not exceed a certain per centum. This would meet the condition that some goods, to meet competition, might have to be sold without any profit, or even at a loss, whereas other goods would safely bear an exorbitant profit, and these inequalities would be rectified by an average profit. In my judgment, however, it would be impracticable to ascertain an average profit. Consequently,

I am opposed to this plan, although it has the strong argument in its favor of enabling the manufacturer to charge a high profit in one case in order to make up for a very small profit in another case, the average being fixed.

(3) Another way, and in my judgment the best, although not free from difficulties, is to provide in the contract that in no event shall the profit exceed a given per centum.

Let the contract state what that per centum shall be. Let it also provide that no item of manufactured goods covered by the contract shall be taxed with a larger percentage of profit than

We will have
Sales Profit in total
with 4%

This would be very healthy for the Light Co.

the one specified in the contracts. A fair criticism on this suggestion is that the manufacturer is frequently obliged to sell some goods, in order to meet competition, without a profit, and that consequently he ought to be allowed to charge a double profit on other goods, so as to make the average. In reply to this criticism is that the manufacturer is at any time at liberty to stop making goods upon which he finds he is not making adequate

profits. Possibly the patents would give him a monopoly, but if not, if he finds himself in competition with other manufacturers, who are selling particular things at ruinous prices, let Bergmann & Co. stop making these things, and let the Light Co. and its licensees buy these goods from such other manufacturers. Indeed we might provide in our contract that Bergmann & Co. are not compelled to make any of the goods covered by the contract unless they can do so profitably; and that, if they stop making any particular goods, we may buy these goods in the open market.

I think we had better take our chances of their abandoning certain goods in that way, and of the possible inconvenience thereby entailed, rather than consent to the principle of an average profit. If the contract provides that no article shall be sold with a larger profit than the one named, we can easily regulate the matter. We can at any time call upon Bergmann to show just what any specified thing costs, and then by adding to the cost the fixed profit, we can regulate the selling price. But if it is a question of average profit, we cannot reach satisfactory results.

suits in any one case, because, whenever we try to regulate the selling price of an article, by first ascertaining its cost, and by adding thereto the profit, Bergmann might say that he had been obliged to add a far greater profit in that instance, in order to compensate him for a loss with reference to some other goods, and to enable him to keep up his average profit. Hence our efforts to regulate prices would be practically without avail. I strongly incline to the opinion, that our best course would be to limit the maximum profits in every instance, and to allow Bergmann to abandon the manufacture of any goods he might choose to give up, reserving to ourselves, however, the right, in case he abandons to license others to manufacture, not only as regards our own patents but as regards other patents owned or controlled by Bergmann & Co.

Can we be sure of always getting from Bergmann all the goods we want, and when we want them, without delay? This is a question of great importance on an exclusive contract. It is a thing for us, if the party who had it was not able to fill orders promptly. I think, however, this danger can be guarded against by a provision similar to that in the Lamp contract. That provision is, in a word, that if the manufacturer cannot fill orders promptly, we have the right to go to other outside manufacturers to have goods made. Probably that provision, although not entirely satisfactory, is as effective as anything

(2) The answer is to make the license perpetual, or until the expiration of Brulotte's present or future patent term, and to provide for the payment of his share of royalties. That is the way the proposed new Camp contract is drawn.

439 Another way could have been provided in the contract to give us, referring to ourselves, however, the right, in order that the Right Co. may terminate the license at any time on 6 months notice.

[illegible]

as regards licenses, obtained by Bergmann & Co's, to use the patents of outside inventors.

Doubtless outside inventors will make useful invention.

in connection with the subject matter of the business of Bergmann

& Co., and doubtless the latter will take licenses from such in-

ventors. Our contract might provide that in such cases Berg-

mann & Co. must take licenses, whenever they take them for them-

selves, for the Light Co. also, for such use as may be proper for

the Light Co., under the contract. That is to say, if Bergmann

should default in making certain goods, and the Light Co. should

be obliged to get other manufacturers to make them, the Light Co.

ought to be able to give such manufacturers, and also to give its

own licensees, the benefit of the licenses for outside patents,

possessed by Bergmann. This has been already discussed by me.

in connection with the new lamp contract, as will appear from my

notes made in connection with the proposed consideration of that

contract. Still, it is not clear that we can do this.

Q. Can we standardize the goods, so that the

quality will not deteriorate?

A. This can be easily done. A provision can be inserted

in the contract that all goods are to conform to the standards

adopted by the Light Co. and that the Light Co. through its

engineering department, shall have the right of thorough inspec-

tion and final rejection. In other words, everything must have

the approval of the Light Co.'s engineering department.

Q. What effect would the exclusive license have

on the business of the Light Co.?

A. It would have no effect on the business of the Light Co.

Q. What effect would the exclusive license have

on the business of the Light Co.?

upon our subordinate companies?

(1) We undoubtedly have the right to insert in all future contracts for subordinate licensee companies a provision that they must buy all their appliances from Bergmann & Co. But, in my judgment, that would be arbitrary and offensive.

(2) We might provide in contracts with subordinate companies (and that is what we do now) that they must buy their appliances, so far as they are covered by the Edison patents, only from such manufacturers as we may license. We may then refuse to license any body except Bergmann. But could not this practically be as arbitrary and offensive as the plan just mentioned above?

(3) Perhaps the best plan would be to say to our subordinate companies that if they do not wish to buy their appliances from Bergmann & Co. either in whole or in part, we will license any other manufacturers they may severally select, to make goods exclusively for such several subordinate companies, but not for any one else. In that case, we ought to bind ourselves to Bergmann & Co. not to grant licenses any such is licensed by the third party and we agree to pay the third party consent at a lower price than our license granted to Bergmann.

THIRD. Would Bergmann & Co. object to our granting licenses to other manufacturers, provided we charged (say) twice as much royalty as we charge Bergmann & Co.

*How could our
charge more at the
with the same
license?*

*Whitcomb
Don't know*

*How to B. & Co.
derive benefit*

By this question I mean to suggest the idea that we might reserve the right to license other manufacturers, in our discretion, provided we charged them a royalty not less than twice as great as that charged Bergmann. *How about a 20% royalty?*
 But is it best to grant an exclusive license at all? *Yes, if it will stimulate the work of Bergmann & Co. and if it will stimulate the work of other manufacturers.*

This is really the vital question. Ought we to place the important and enormously profitable business of manufacturing these appliances for all the United States, in the hands of one company? *Yes, if it will stimulate the work of Bergmann & Co. and if it will stimulate the work of other manufacturers.*
 What will be the effect of such a monopoly upon our business? Will it have a tendency to make the light company odious in the eyes of the public, and if so, how far should that fact influence us? Instead of giving an exclusive license to one firm, had we better adopt the policy of giving licenses, all upon the same terms, to any and every reputable manufacturer, providing they will make the goods according to our standards? *Yes, if it will stimulate the work of Bergmann & Co. and if it will stimulate the work of other manufacturers.*
 These are very important questions for our Directors to consider. *Can you think of any other policy?*
 ourselves to Bergmann & Co. *Yes, if it will stimulate the work of Bergmann & Co. and if it will stimulate the work of other manufacturers.*

But it must be remembered that our business is one of vast detail, not only otherwise but especially in a manufacturing sense, and that there is room for important improvements in the manufacture and details of appliances. If we give an exclusive license to such a firm as Bergmann & Co., we stimulate them to the highest possible extent to assist in perfecting the details

The United States is one of the most important countries in the world. It is the only country in the world that has a large and growing population. It is the only country in the world that has a large and growing economy. It is the only country in the world that has a large and growing military power. It is the only country in the world that has a large and growing cultural influence.

Can you think of any other policy?
Yes, if it will stimulate the work of Bergmann & Co. and if it will stimulate the work of other manufacturers.

of their work. If on the other hand, we grant general licenses, we enlist a greater number of manufacturing people, in the aggregate, but, possibly, we do not anywhere, in a system of general licensing, provide us with a supply not less than that of great and small individual enterprise and ingenuity to such an extent as where an exclusive license is granted to one firm.

Another consideration, of a general nature, is that Messrs. Bergmann & Co. have already obtained a start in the business, which will probably enable them to outstrip everybody else. The organization of their firm, their experience, their tastes and sympathies, all combine to make them pre-eminently successful in this line of business. They offer us a share in their success, provided we will give them an exclusive license. While they would pay something, of course, to be licensed jointly with other people, they would doubtless pay a much larger amount for an exclusive license. Whether, however, we would realize in the long run more money, for the Light Co., from giving an exclusive license, than from farming out licenses generally to a number of reputable manufacturers, is an open question.

Let me ask that the Edison Machine Works at George Street also have an application before us for an exclusive license for their business. It will be well therefore for us to bear in mind that in deciding this question of granting an exclusive license to Bergmann & Co., we are practically also deciding the

question of an exclusive license to the Edison Machine Works, the latter a greater number of manufacturing people, in the sphere of the Edison Machine Works.

But, possibly, in a sphere of general license, the Edison Machine Works, and its individual enterprisers and ingenuity to such an extent as where an exclusive license is provided for the Edison Machine Works.

In the consideration, of a general license, to the Edison Machine Works, the latter already business a great number of the Edison Machine Works, and its individual enterprisers and ingenuity to such an extent as where an exclusive license is provided for the Edison Machine Works.

In the consideration, of a general license, to the Edison Machine Works, the latter already business a great number of the Edison Machine Works, and its individual enterprisers and ingenuity to such an extent as where an exclusive license is provided for the Edison Machine Works.

In the consideration, of a general license, to the Edison Machine Works, the latter already business a great number of the Edison Machine Works, and its individual enterprisers and ingenuity to such an extent as where an exclusive license is provided for the Edison Machine Works.

Let me say that the Edison Machine Works of George Street, New York, have an application before us for an exclusive license for their business. We shall be well prepared for us to hear in the future, in the consideration of granting an exclusive license to the Edison Machine Works, and its individual enterprisers and ingenuity to such an extent as where an exclusive license is provided for the Edison Machine Works.

Memoranda of Organization of the Mining Department of Bergmann & Co. N.Y.

Feb'y 8th 1883.

Bergmann & Co. (A. Bergmann, E.H. Johnson & J.H. Edison)
are to furnish capital to run the business.
E.D. Greenfield, L. Stieringer & C.F. Hammington
are to give their services and solicit orders &
attend to the carrying out of same -

Greenfield is to draw 1200.⁰⁰ salary per annum

Stieringer is to draw 1200.⁰⁰ " " "

Hammington is to draw 900.⁰⁰ " " "

After payment of salaries, office & other
expenses, commissions, royalty etc, the
net profits are to be equally divided between
Bergmann, Johnson, Edison, Greenfield, Stieringer
and Hammington, 1/6 each.

It is agreed that where said mining depart-
ment shall secure Bergmann & Co orders for
fixtures, it shall be entitled to 5% commission.

on the net amount of the order for fixtures to be credited on payment of the bills in consideration of which, when required the said wiring bureau are to put up the fixtures without charge to Ogden & Co., keeping separate and accurate account of the cost of putting up fixtures which cost is to be charged to the profit of the Wiring bureau on the wiring.

Architects and others whose influence shall secure orders to the Wiring bureau shall be entitled to a commission not to exceed 10 cents per light, which is to be deducted from the profits of the Wiring.

Copy

New York Feby 8/83

Mess Birgmann & Co propose to take in Mess E. F. Greenfield, C. F. Hamington & S. Stürminger & establish a department for wiring buildings and erecting pole lines on contract. They propose to solicit all over the country for wiring new buildings in process of erection and deal directly with the owners. All wiring devices used and all the rules and regulations of the Light Co to be followed, and subject to the control of the Edison Electric Light Co. - to wire for no other Co.

They also propose to do wiring for the Edison Electric Light Co or any of its subsidiary companies on contract at such a price that they shall net fifty (50) cents on each light, but the losses in any event are not to exceed

the schedule prices hereto annexed
 = Where they obtain by solicitation
 the wiring of new buildings, they are
 to be allowed (50) fifty cents profit per
 lamp and the E. C. L. Co (25) twenty five
 cents, and should the estimate be so far
 wrong that there remains an excess
 of profit over these sums, then they are
 to divide the excess of profit equally
 with the E. C. L. Co: but the E. C. L. Co are
 to receive at least (25) twenty five cents.
 in any event.

Where wiring is done outside of
 New York and its immediate vicinity
 the additional expenses of fares, lodgings
 etc are to be added to schedule prices.

The books etc of the concern or
 rather bureau are to be open at all
 times to the inspection of the Light C.

3.

Schedule

	per light
#1 Surface & Beam Work	2.64
2 Fire Proof Building	3.61
3 Surface (only)	3.17
4 Concealed	2.10
5 Concealed with tubes back of cornices	1.07
6 First Class Residences - already occupied.	6.00

Wiring includes, wire, moulding, cut outs etc.
all things that are necessary to bring the current
to the fixtures. For the purposes of this agreement
switches are to be considered as included
among Fixtures

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
NO. 228 TO 228 AVENUE D.

1883-02-12.

New York, Feb 12 1883

Mr. Saul Inoué

60 St. N. City

Dear Sir: Please find
memorandum of notes received
by us from Isolated Co.
with disbursements

Dec 28	90 days	5325.96	Net	78.91
Jan 30	90 "	14884.02		75.70
Jan 6	90 "	2396.38		34.26
Feb 3	90 "	2760.45		41.48
				230.148

Very Truly Yours
Bergmann & Co.
John

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
NO. 228 TO 228 AVENUE D.

1883-02-12

New York, Feb 12 1883

Mr. Saul Inoué

St. N. City

Herewith find additional
memorandum on Isolated Notes

Check 90 days \$15-Feb 10, 4466.27 direct 66.06

Credit
Check Feb 10 for balance 230 days on

Note Feb 10 12.80

" Feb 10 for balance 230 days

on Note Feb 10 22 26.80

230.26

Bergmann & Co.

BERGMANN & CO.

1883-02-17.

— 108-112 WOODSTOCK STREET, —

(BY APPOINTMENT.)

MANUFACTURERS OF EDISON'S INVENTIONS,

EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY.

REMOVED TO
COR. 17th ST. & AVE. B.

New York, Feb 19 1883

Mr. Thos. A. Edison,

Dear Sir,

I fully appreciate your kind offer to let me try some experiments in your laboratory and thank you very much. I find it impracticable to do so for the following reasons.

- 1st. It is liable to interfere with the operations of your assistants
- 2d. I must learn where things are situated which it is necessary to use, the positions, connections & C of wires, and fit up arrangements to control current.
- 3d The little time I have to spare from down town is largely consumed in getting back and forth.

My conclusion is that as soon as I can spare the means to buy material I will pursue the subject at Central Station.

Had a talk with Mr. Cashe about using some "juice" the amount used to be estimated. Yours Respectfully, Chas. S. Bradley.

BERGMANN & CO.

1873-02-21

108-112 WOODBURN STREET,
(BY APPOINTMENT.)

MANUFACTURERS OF EDISON'S INVENTIONS,
EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY.

New York Feb 24/88

Mr. J. Insull
10 Spence Borden Esq
Herald Bldg - Boston Mass

Dear Sir
In reply to your telegram
we would say - The regulator which
you speak of is as far as we know
entirely in Mr Edison's hands as yet.
We have rec'd no particulars, instructions
or order concerning it. As to the
substitute for Calcutta Light; - We have
furnished Mr Edison with a reflector
as desired by him for experiment. What
the result of the experiment is, we
do not know.

Yours truly
Bergmann & Co

BERGMANN & CO.

1883-03-09

108-112 WOODBURN STREETS.
(BY APPOINTMENT.)

MANUFACTURERS OF EDISON'S INVENTIONS,
EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY.

REMOVED TO
COR. 170 ST. & AVE. B.

New York, March 9 1883

Mr. J. Insull
is Fifth Ave City
Dear Sir

In reply to yours of 8th inst.
Prices of each of the articles which you mention
as we have already made are as follows—
25 Dr. Meter Complete \$8.50 Net
50 " " " 11.25 "
100 " " " 17.00 "

For other meters we cannot give prices without first
having made models and knowing also in what
quantities they will be ordered.

Automatic Regulators are as follows—
for 1 Z. 185.00 Net

2 Z.	\$92.50	"
1 L.	192.50	"
2 L.	207.50	"
1 K.	200 —	"
2 K.	222.50	"
3 K.	245. —	"

Street Lamps are various according to design.
The Roselle Lamp with Bracket and No-Key Lock-
ets are \$6.25 each.

Socket board with banks of receptacles
for foot lamps, 100 per board @ \$18.00 Net
Yours truly Bergmann & Co.

1883-03-17

BERGMANN & CO.

108-112 WOODFORD STREET, N.Y.
(BY APPOINTMENT.)

MANUFACTURERS OF EDISON'S INVENTIONS, $\frac{1}{02}$

EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY. $\frac{1}{02}$

REMOVED TO
COR. 17th ST. & AVE. B.

New York, March 17, 1883

Mr S. Ingersoll -
65 Fifth Ave. City
Dear Sir

We can furnish K Regulators for
Village plants, including shaft, couplings
etc, at the rate of \$50⁰⁰ net for each K Dyn-
amo - We enclose you details of estimate,
which we trust you will find satisfactory.
Also, we will furnish 12 light
Meters for Village Plants, in lots of 150
at \$4²⁵ each.

Yours Very truly
Bergmann & Co

BERGMANN & CO.

1883-03-17

100-112 MOORE STREET, N.Y.

(BY APPOINTMENT.)

MANUFACTURERS OF EDISON'S INVENTIONS,

EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY.

REMOVED TO

COR. 17th St. & AVE. B.

New York, N.Y. 17 1883

Estimate Village Plant K Regulators

5 lbs # 20 gal. wire.	25	4.25
6 spools.	25	1.50
Box		6.
5 lbs Copper ³⁰	1.50 less scrap ³⁰	1.20
25 " Iron	06	1.50
110 screws		.85
1/2 lb Fibre		.20
Winding spool, Cutting and Japanning Ea. ²⁵		1.50
Making Commutator including shaft, bearings etc		12.00
Connecting		3.50
		32.50
Exp of 15%		4.88
1/3		37.38
		12.46
		49.84

1883-05-19
BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

NOR. 202 TO 16 AVENUE

New York, May 19 1883

Mr. S. Inguill

65 Fifth Ave.

Dear Sir Please let have
have check for 2000⁰⁰ which
we must have today to
get through. We had to pay
a note today for 700⁰⁰.

Yours truly
Bergmann & Co.

1883-05-19

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF

FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT,

NO. 292 TO 298 AVENUE D

New York, May 19 1883

Mr S Insull
65 7th Ave

Dear Sir
We encd herewith
drawing of regulator &
connections for Mr Batchelor.
Please have it put into his
trunk if it is still there.
If it is not, please return
the drawing by express and
we will put it into the
box with the regulator

Yours truly
Bergmann & Co

1883-05-24
BERGMANN & CO.
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT

Nos. 292 TO 298 AVENUE B.

New York, May 24 1883
Mr S. Insull

65 Fifth Ave - City

Dear Sir

We hereby agree in case
we receive the order to make the
Mackenzie Indicators as per our
proposal of this date to allow you
a rebate of 55 (fifty five) cents on
each instrument

Yours Truly
Bergmann & Co

BERGMANN & CO.

108-112 WOODEN STREET,
(BY APPOINTMENT.)

MANUFACTURERS OF EDISON'S INVENTIONS,
EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY.

1883-05.29

New York, May 29 1883

REMOVED TO
COR. 121 ST. GUY R.
Mr. D. S. Hall

65 Fifth Ave
Dear Sir

To make the Indicator without
the "Answer-back" attachment will
make a difference of fifty cents
each. This is as near as we can
estimate without having the model
itself returned

Yours truly,
Bergmann & Co.

BERGMANN & CO.

1883-06-02

108-112 WOODBURN STREET,
(BY APPOINTMENT.)

MANUFACTURERS OF EDISON'S INVENTIONS,
EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY.

REMOVED TO

17th ST. & AVE. N.

New York, June 2 1883

Mr S. Inzull
65 Fifth Ave
N.Y.

Dear Sir

In reply to yours of 1st inst.
It is intended to screw the 50 or 100
C.P. Lamp into a regular No-Key Socket.
and to use a ^{separate} side switch adapted
to carry the number of lamps to which
these lamps are equivalent.

Yours truly
Bergmann & Co
K

THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

1883-06-07

NEW YORK

1883

Messrs Bergmann & Co
292 Avenue B
City

Dear Sirs: Enclose your corres-
pondence as to Photograph to
which please give your
attention.

Yours truly
Samuel Insull

Mr Insull

This came but nothing else
Respectfully
W H Klein Jr

June 11/
Messrs Bergmann & Co

You are — An oversight! Here
S Insull
Sd

T. A. EDISON,
65 Fifth Avenue.

1883-06-11

New York, June 11th, 1883

Messrs Bergmann & Co.

City.

Gentlemen:-

Will you please hurry forward the large electrolier
for the Chicago people. Mr. Bliss writes for this to-day.

Very truly yours,

Saml Insull

Mr Insull

This was expressed last
Thursday & bill sent at same
time. Therefore Mr Bliss knows
all about it by this time

Yours truly,
P. H. Kimball.

5

1883-06-15

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT,
Nos. 282 TO 298 AVENUE

New York, June 15 1883

Mr L Russell
65 Fifth Ave - City

Dear Sir In reply to yours
of today - We can furnish
a regulator same as the
one for Bijou Theatre,
to control 550 lights
3 banks of regulators, price
\$800⁰⁰ = twice required. between
2 and 3 works if necessary -

Yours Truly
Bergmann & Co

1883-06-18

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT,
Nos. 292 TO 308 AVENUE N

New York, June 18, 1883

Mr Inoué

Mr Greenfield wrote
you on Saturday by my instructions
for acceptance of estimate
for wiring Rumburg - I find
I have it already. You
could not therefore find it a
gain

Yours Respectfully
D. H. Cline Jr.

1883-06-18

BERGMANN & CO.,
ELECTRIC WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

100, 102 TO 104 AVENUE

New York, June 18th 1883

D. Snell Esq,
65 Fifth Ave

Dear Sir
Enclosed please
find estimate for Sumbury
Pa. Kindly signify
your acceptance, and return
same to D. Bergmann & Co.
Electric Light Wiring Dept
17th St & Ave C. and oblige
Yours Truly

D. Greenfield
Genl Manager

BERGMANN & CO'S
ELECTRIC LIGHT WIRING DEPARTMENT.

BERGMANN & CO.,
ELECTRICAL WORKS, 1883

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

NOS. 209 TO 208 AVENUE D.

New York, June 18th 1883
Mr. Paul Smith
65-5 Ave

Dear Sir: Mr. Paulson Pres of
the Constitution Amalg 3 barrett
is inquiring about Electric Motors
of say from 1/2 to 2 horse power.
Can you supply him
with one

Yours Bergmann
J. C.

What are they wanted
for can furnish 1/4 horse
power motor to go on
main downtown higher
powers being made

1883-06-26

BERGMANN & CO.,
ELECTRICAL WORKS

SOLE MANUFACTURERS OF THE EDISON ELECTRIC LIGHT
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT

The size you sell is 1/2 size of the one I want. I will price them 75¢ each. I want 12 of them. I want a motor in connection with a tricycle at his country residence. 1/4 of a horse power will of course be too small.

Dear Sir - I am sorry to hear of your trouble. I will price you 12 of them. I want a motor in connection with a tricycle at his country residence. 1/4 of a horse power will of course be too small.

We have however an inquiry from a consumer in the district who wishes to use several fans.

Can we make him any terms. You will see that fans will be use only for a few months yet and you will see the necessity of hurrying the matter.

Or can you at least let us know whether the motor will be sold outright or will they be rented.

Reply Bergmann & Klein

1883-07-23

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF

FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT,

NOS. 299 TO 298 AVENUE

New York, July 3, 1883
Mr S. Inoull
65 7th Ave -
Dear Sir

Can you not man-
age to get us a check
for \$202¹⁶ interest due from
the Isolated Co as per stmt
we sent you last night -
Also for 45 days interest on
the note for 3600.- received
today. & if possible for
30⁰⁰ interest due from the
Light Co as per stmt which
you also have. I want
the check to deposit with
the note - need it in fact -
as I cant very well send
in the note "all by itself"

Yours Truly
C. Bergmann
K

BERGMANN & CO.
ELECTRICAL WORKS,

1883-07-27

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES

FOR THE
EDISON ELECTRIC LIGHT

Nos. 292 TO 298 AVENUE B.

Springer New York July 27/1883

Dear Edison

Like the parrot and
many here we have a heap of
a bump. I wrote you yesterday saying
I had trouble with ground wires. But
now digging down around them to
bump the wires I got them all dug
out and found them to be the only
some bit of measure I was after &
not at all like the plan I got once
ordered them taken up as I would under
no circumstances permit me to be
so placed upon them as would make
midnight getting me down and
has them about so. have one about
about and will work again tonight
too midnight cannot get men to
work later. We started up an ac-
cident circuit last night and it is
a grand piece of illuminating the
building much better than we expec-
ted. It placed every cluster of 15 ft.
high over where the men were working
it was immovable we had every place
all the are lamp people and I thought
took particular pains to care them

attention to the ^{BERGMANN} lamp paralysis
as he calls this is left distinct in the
head nothing to say. One word is
getting along fairly well but I am
sure the nervous system will not
be ready to start. ^{July 27, 1880}
and am afraid there will be ^{no} other making
some if we had one ^{to} ^{make} ^{the} ^{machine}
as the steam pipe is not ^{up} ^{to} ^{the} ^{point}
up I wish you would send me
a sketch of the ^{plus} ^{frame} ^{for} ^{feeder}
for feeders so that I can see what
what they will look like so that I can
make my feeder ^{comple} ^{to} ^{be} ^{re}

We commence to pick up again.
For Corbin's circuit.

The weather has been so very hot
and dry that we must submit to
much more driving; the men working
here are getting very poor.

Regards to all

Yours Respectfully
W. S. Munn

1883-08-24

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

NOR. 202 TO 206 AVENUE D

New York,

Aug 24th 1883

Mr Paul Mueller
65 Fifth Ave
City

Dear Sir

We enclose statements
as requested in your
favor of this Am. the
same will explain themselves
excepting your query
regarding those liabilities
which are pressing etc
we would answer, all
itemized accts are paid
due and as a general
thing they are pressing
us very hard for money
and you will therefore see
there is about 10000.- which should
be paid at the earliest
date possible

Yours

Bergmann & Co
24

1883-09-04

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF

FIXTURES, & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

NOS. 202 TO 208 AVENUE B.

New York, Sept 4th 1883

Mr. Saul Lucull
to Effect in
City

Dear Sir

In reply to your favor
of 3 inst relating to new switch
Andrew design - we beg to
say that the same will
be ready Thursday the 6th
inst

Respy Yours etc

Bergmann & Co
att-

OK

RECEIVED
SEP 5 1883
ANSWERED

OK
188...
FILE NO.....

1883-09-05

BERGMANN & CO.,
ELECTRICAL WORKS,
ANSWERED
SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
222 TO 228 AVENUE B.
FILE NO. 1883

New York, Sept 5 1883

Mr S. Insull
60 Fifth Ave

Sir In reply to yours of 4th
inst, concerning Arc lights
for Mr Catella, we would
say we only know Mr Catella
in the matter - If Mr
Barnard orders us to charge
them to him, we will do

Yours

Respy Yrns
Bergmann & Co.
K.

Who gave
the order
to S. Insull
Arc Lights.

They were Dr Moore's
Arc Lights.
Where is the document,

1883-09-05

BERGMANN & CO.
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FURNITURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Sept. 5th 1883

Mr. J. P. Edison.
25 Fifth Ave.
N.Y.

Dear Sir:

Our Wiring Department not having
come up to the expectations which we had formed
for it we respectfully notify you that we are now
winding up its affairs and shall close up the
wiring business on the 10th inst.

We shall render you as soon thereafter
as possible a complete statement of its affairs.

Very respectfully,

Bergmann & Co.
K.

RECEIVED
SEP 7 1883
ANSWERED

Sept 14 3
FILE No.

1883-09-07

BERGMANN & CO.,
ELECTRICAL WORKS,

RECEIVED

SOLE MANUFACTURERS OF

FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

ANSWERED

208, 202 TO 206 AVENUE D.

Sept 7 1883
New York, Sept 7 1883
No. 188
To Mr. Edison Esq
at Fifth Avenue
Dear Sir

In reply to yours of 6th
inst, would say that the order
for the Arc lights was given
verbally by Mr. Catehells to
our Mr. Bergmann.

Yours Respy
Bergmann & Co
K

6 c 7

1883-09-10

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
NOS. 292 TO 298 AVENUE B.

New York, Sep 10 1883

Thos A. Edison Esq

65 Fifth Ave - N.Y.
Dear Sir

In reply to yours of 9th inst, would say that we are anxious to get the trade of the Edison Company and will agree to furnish goods in our catalogue to them at 30% discount excepting:- sockets, cut-outs and switches and on these as an extra inducement we will make the discount 32½%. These prices ought to fetch their trade & we hope to hear from them soon.

Yours truly
Bergmann & Co

1883-09-10

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
NOS. 222 TO 228 AVENUE B.

New York, Sept 10: 1883

Walden Esq
65 Fifth Ave NY.

Dear Sir Please deliver
the Dynamo Changing Switch
Will need it for a little while
as model

Yours Truly
Bergmann & Co

Sent back
to Mr. Esq

1883-09-11

Beigman

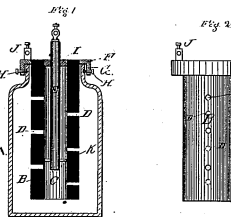
This is a description of the
cell sent you several
days ago for test, please
test & report to Mr. Duval
The test is for Mr. Coles of
He Ansonia Brass & Copper
Co }

(No Model.)

H. A. BURNS.
ELECTRO BATTERY.

No. 284,605.

Patented Sept. 11, 1883.



Witnessed

E. H. Harkness
C. S. JonesInventor
H. A. Burns
By C. S. Jones
C. S. Jones

H. A. BURNS, Patent Agent, Hartford, Ct.

UNITED STATES PATENT OFFICE.

HUGH A. BURNS, OF ANSONIA, CONNECTICUT.

ELECTRIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 284,605, dated September 11, 1883.

Application filed May 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, HUGH A. BURNS, a citizen of the United States, residing at Ansonia, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Electric Batteries, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention consists in certain improvements in the construction of carbon batteries for electrical purposes, as will be hereinafter described and claimed.

In the drawings, Figure 1 represents a vertical section of my improved battery, showing the several parts in position; Fig. 2, a side elevation of the carbon cylinder separately; Fig. 3 represents a top plan view of the carbon cylinder and of parts connected therewith, as will be presently explained.

It is the design of my invention to produce a battery capable of use in the various and numerous branches of the electric art; and it consists, essentially, in constructing a hollow carbon cylinder of about six inches in length and having a series of holes or perforations at suitable intervals in its length, a disk or cap soldered or otherwise attached to the outer circumference of said carbon cylinder, at its upper end, for the double purpose of forming a means whereby said carbon cylinder may be suspended within and attached to the indexing jar or bottle, and also affording a support for the positive pole of the battery, and in suspending the positive electrode within said carbon cylinder by means of a rubber disk or washer, which rests within the top of the central orifice of the carbon cylinder.

A represents the jar or bottle, which may be constructed of any well-known or desirable material and of any suitable form. Within this jar is contained the solution of sal-ammoniac, such as is commonly employed in electric batteries.

B represents a carbon cylinder, having a central perforation or bore, C, extending throughout its length, and a series of holes or perforations, D, extending through the walls thereof, by means of which the ammoniacal solution can freely pass to the interior of the

carbon cylinder and into contact with the positive electrode or strip of zinc B.

F represents a ring or disk, of brass, wood, or other suitable or convenient material, wood being preferred on account of its cheapness, which is centrally bored to fit tightly around the top of and rest upon the top edge of the carbon cylinder, and has a depending flange, G, which, when the mouth of the jar is of corresponding circumference, engages with said G and is held thereon by friction. It is, however, designed that this flange G shall be provided with suitable slots or holes, through which clamps H may be passed, in order that such ring or disk F, which forms a cap for the jar, may be applied to the carbon cylinder, suspended within jars having mouths of different sizes, the disk or cap in such cases being securely clamped to the top of the jar by the clamps H, in the manner shown in Fig. 1. When the disk or cover F is constructed of wood, the positive pole J is either placed in direct contact with the carbon or else in metallic contact with a conductor leading to said carbon cylinder. This disk F and the upper end of the carbon cylinder are securely attached together by soldering or other means, in order that when the disk rests upon the top of the jar said carbon cylinder shall be properly suspended within said jar without necessitating any of the usual expedient means for attaching said cylinder to or adjusting the same in position within the jar. Furthermore, by reason of thus attaching the carbon cylinder to the disk F, said cylinder can be very readily removed whenever desired and replaced in position with great ease without appreciable loss of time.

I represents a disk or washer, of rubber or other elastic insulating material, which is inserted within the central bore of the carbon cylinder, at its upper end, being held firmly therein by this disk F. This insulating disk has a central opening which is slightly less in circumference than the circumference of the zinc strip or pole B, in order that when the zinc strip is passed through such central opening in the disk I said zinc strip will be securely and rigidly held, thereby suspended within the central bore, C, of the

1883-09-11

carbon cylinder. The zinc pole or strip B has at or near its lower end one or more pins, K, of insulating material, passing therethrough, by means of which contact between the zinc and the carbon is prevented.

J represents the positive pole, which is connected with the disk or cup F, and it and the zinc strip are provided at their upper ends with a suitable connection for the current-transmitting wires.

A battery constructed as above described will hold a longer and a stronger current than will other batteries of greatly-increased size, and the shape and construction of the cylinder B secure a great advantage to the positive and negative poles.

Having thus described my invention, what I claim therein is—

1. The combination of the carbon cylinder B, having central bore, C, and perforations D in the walls thereof, and the zinc pole or strip

E, having pin K, substantially as and for the purpose set forth.

2. The combination of the carbon cylinder B, having central bore, C, elastic disk I, having central opening, and the zinc pole or strip E, having pin K, substantially as and for the purpose set forth.

3. In an electric battery, the combination, with jar A, of disk F, positive pole J, and hollow carbon cylinder B, attached to said disk F, elastic disk I, adapted to rest within the central bore of said carbon cylinder, and the positive electrode E, suspended by said elastic disk within the carbon cylinder, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HUGH A. BURNS.

Witnesses:

ROBERT R. WARD,
W. O. WALLACE.

RECEIVED

SEP 19 1883

NEW YORK

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF

FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

NOS. 222 TO 228 AVENUE D

FILE NO.....

New York, Sept 12 1883

Mr. T. A. Edison
65-5 Ave

Dear Sir

We hereby propose
to furnish you with
connections to sample as
follows: for the first 100
35¢ each, on the second lot
we can probably do a little
better, as we have to make
up tools for them

Respyr Yours
Bergmann by H

1883-09-17

BERGMANN & CO. ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT

ELECTRIC LIGHT WIRING DEPARTMENT

New York, Sept 17, 1883.

M. S. Dunsall
65 Fifth Ave. City.

Dear Sir: Please find per requisition for the
following material shipped yesterday to William
Johnson, of Edison Electric Co. Boston, Mass.
via Fall River Line, viz:

- 50 lb. No. 14 Wire
- 30 " No. 16 "
- 28 " No. 18 "
- 500 ft. No. 14 Moulding.
- 500 " No. 14 "

Very truly yours,
Bergmann & Co. E. L. D.

#237
17th unit

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT

NO. 222 THIRD AVENUE N. Y.

1883-09-20

New York, Sep 20 1883

FILE NO. 1883

Mr G. A. Edison

Dear Sir,

We have in stock
motors of $\frac{1}{6}$ H.P. shall we send
one of these. We have no
larger ones excepting 1 of about
 $\frac{1}{2}$ H.P. not quite finished
& we are at work on 1
which will be about 1 H.P.
we believe. What shall
we send them--

Yours truly,
J. Bergmann & Co.

Received
5 Sept 20 1883
J. A. Edison

1883-10-01
BERGMANN & CO.
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Oct 1 1883

J A Edison Esq
65 Fifth Ave
N.Y.

Dear Sir

We beg to inform you that we will allow you, on all orders received on and after this date, a discount of 30 % from our Catalogue prices, instead of 25 % as heretofore.

Thanking you for past favors, and trusting that you will recognize in this reduction our desire to have you share with us the benefits arising from the natural development of our business, and so will continue to favor us with increased orders, we remain.

Very respectfully, Yours -

Bergmann & Co

ACKNOWLEDGED
J A Edison
Oct 1 1883

1883-10-12

BERGMANN & CO.
ELECTRICAL WORKS,
SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Oct. 12th 1883.

Hos. A. Edison Esq. New York.

Dear Sir:

For having intimated to me that some misunderstandings have recently been engendered amongst the Consumers in the Fourth district, caused by certain written contracts which I am said to have made, stipulating that the cost of the Edison Light should not appear on their gas bills, I will take the trouble of entering into an explanation, since I claim to be as clearly and intelligently acquainted with the respective duties of my late position, as any employee or officer of the Edison Electric Illuminating Company.

The only two instances which I can call to mind, wherein I made any written agreement to the effect that the Edison Light should not appear the cost of their gas bills, are those of the Continental Fire Insurance Co. Broadway, and Berlin and Sons, William Street below Fulton St. In the case of the Continental Co., it was expressly understood on the part of Elmer Eaton and Mr. Hartings, that the Works should have a guarantee that his gas bills of the preceding year should furnish a foundation and that they should not be exceeded by the bills of the Edison Co. I was fully authorized to make

1883-10-12

BERGMANN & CO.
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Oct 12, 1883-

P. A. E.
7)

this guarantee and did so.
In regard to Messrs. Berlin & Jones, it was expressly understood that they should be guaranteed in the same manner as to coal and further seen that the Edison Co. should assume the entire cost of wiring the buildings of Messrs. B. & J. both front and rear and over all the floors. If Messrs. Edison and Hastings will recall the circumstances governing these two cases, I think they will bear me out in my statement. There are the only two instances I can call to mind, if any additional ones exist, I am satisfied that I was first duly authorized to so act in the matter.

It has never been my custom to either exceed my authority or make false representations in any business position which I have held, and I certainly never proposed or intended to depart from my usual course during the 2 1/2 years that I was associated with the Edison Electric Illuminating Company and the Edison Company for Gasolated Lighting.

It has been my custom in all cases to guarantee customers that the cost of the Edison light should not exceed the cost of gas @ \$2.25 per 100 feet, provided they used the same number of lights, of equal candle power, and approved the same lamp and burner in its use. In some instances others have released this guarantee to writing. Which was fully authorized

1883-10-12

BERGMANN & CO.
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES

FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Oct 12 1883.

P.A.E.
2
To be sent by the American Electric Light
Company, and the Superintendent of the District
which is now in the hands of the
which is now in the hands of the

This statement shows the exact line of my
business transactions while with the Company, all
statements to the contrary notwithstanding.

Thanking you for the opportunity of placing
myself on record in this matter I remain Sir

Yours Obedient Servant

Wm. H. H. H. H. H.

1823-10-16

Form L

THOMAS A. EDISON,
Central Station, Construction Dept.,
No. 65 FIFTH AVENUE,

New York, October 14th, 1883

Messrs. Bergmann & Co.

292 Avenue B, City.

Dear Sirs:-

Referring to the attached invoices, which we have received from you, one dated the 2nd. October and the other the 11th. inst., we beg to say that our order No. 232, under date of September 13th., has been covered by your invoice of September 29th., which calls for 50 Johnson connections, and on the invoice you have noted "waiting shipment". *(The other 50 on this order were sent to)*

✓ 50 of 13 were in
You were instructed to send these to Lawrence, and advised us that you had done so.

Our order No. 273, under date of the 2nd. October, calls for 100 Johnson connections, 50 of which you were instructed to send to Lawrence and 50 were to be held in stock subject to our order. We should have considered these bills to have been rendered in duplicate were it not that in one instance you charge us fifteen cents for a box and in the other twenty five cents, and from this we are led to believe that you have sent altogether 150 of these connections to Lawrence, instead of 100.

We shall be glad if you will look into the matter and let us know if our deductions are correct. You could tell if you have sent too many to Lawrence by ascertaining if you have any

1883-10-16

Form L

THOMAS A. EDISON,
Central Station, Construction Dep't,
No. 65 FIFTH AVENUE,

New York, ... 188

2

at all in stock, as you should have just 50 on hand.

Very truly yours,

Thomas Edison
J.

Enclosure.

50 #282 - to Princeton as per bill - Shipped
50 " " Still on hand - Oct 11/14/83
50 } #273 as per three bills, shipped
50 }

2.00 - Shipped 1.50.
On hand, 50.
3.00.

Mr Randolph

These Bills are
O.K.

Jate

RECEIVED
OCT 18 1883
ANSWERED

.....188...
FILE No.....

THOMAS A. EDISON,

Central Station, Construction Dept.,

No. 65 FIFTH AVENUE,

1883-10-24
Form 1.

New York, October 24th, 1883

Messrs. Bergmann & Co.

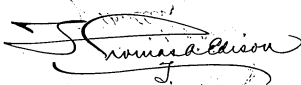
292 Avenue B, City.

Dear Sirs:-

Referring to the attached have these been sent forward

yet?

Yours truly,


T. A. Edison

Enclosure, 0.

The pole raising tools
were shipped to Mr. Mullin Oct 29th

1883-10-24
Form L.

THOMAS A. EDISON,
Central Station, Construction Dep't,
No. 65 FIFTH AVENUE,

New York, October 24th, 1883.

Messrs. Bergmann & Co.

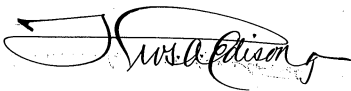
292 Avenue B, City.

Dear Sirs:-

We have an invoice from you under date of the 20th.
inst. for one motor shipped to E. H. Lord, Lawrence, Mass.

In relation to Mr Klein's remark that you should have a
requisition authorized by the Light Company, we beg to say that we
have supplied you with our official order No. 252, and therefore do
not understand what further authority you can possibly require
for having made the shipment.

Very truly yours,



We merely understood that
the "Light & Illum Co." had
control of the Motor business.
P.H. Klein Jr.

BERGMANN & CO.

1883-11-07

— 108-112 WOODBURN STREET, —
(BY APPOINTMENT.)

MANUFACTURERS OF EDISON'S INVENTIONS,

EDISON'S ELECTRIC LIGHT APPLIANCES A SPECIALTY.

New York, Nov 7 1883

601 (123) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Mr T. A. Edison
65 7th Ave -
N.Y.

Dear Sir
Yours of 5th inst received in
reference to 10-25 St Meters shipped
to Lawrence - It is too late to make
such a claim as you do & we cannot
allow it - We inclose you copy of
invoice which was sent with the goods
on day of shipment Oct 2d - Show-
ing that the bottles were sent
with the meters - the full comple-
ment - It seems to me that you
must look to the parties who re-
ceived the goods for explanation, as
all the evidence we have, tends
to show that the order was properly
filled - Yours truly

Bergmann & Co

Nov 10th 1893
 Sir We will send
 the 2 Ampere meter
 & the repaired one to
 Mr Anderson in 4 days
 Yours truly
 Benjamin T. Lee

T. D. Form 4.

1893-11-20

100,000-5-4-38

BALTIMORE & OHIO TELEGRAPH COMPANY.

NIGHT MESSAGE.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message.

Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of messages sent by night messenger, or by registered meter, beyond a sum equal to ten times the amount paid for transmission; nor in any case when the claim is not presented in writing within three days after sending the message.

This is an UNREPEATED NIGHT MESSAGE and is delivered by night messenger, under the conditions named above.

GEORGE P. FRICK, President.

R. STEWART, Superintendent.

NUMBER 24163	SENT BY X A B 7	RECEIVED BY J B 19 paid 2.50	CHECK 1383
Dated Jiffin Oct 30		Rec'd at Mr 20	
To Benjamin T. Lee		are to 417 St. N.Y.	

Send an assortment of wood cleats also lot
 of new cut-outs with attachment plugs per
 B & O express.

St. L. Wacker

THE B. & O. PRINT

1883-11-24

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
Nos. 292 TO 298 AVENUE D.

New York Nov 24 1883
Mr S. Mcull

65 Fifth Ave
Dr Sir

Kindly telephone me
in the morning ~~about the~~
rating of Mr C. Cornwall
Ypsilanti. Mich
and also send me a special
report on him - Would like
to have it as soon as possible
as we cannot ship his order till
we get it and he is in a hurry -

Yours truly

Bergmann & Co.
N.

1883-11-26

BERGMANN & CO.,
ELECTRICAL WORKS,
SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT,
319, 321 TO 325 AVENUE D,
NEW YORK, NOV 26 1883

Mr. S. M. M. M.
65 Fifth Ave
City
Dear Sir

Our tester reports
on the battery sent us as
per the enclosed patent is
as follows-

Internal Resistance 1.0hm
Strength 1.18 volts
Current 1.18 amperes

When put on short circuit
it runs down very
quickly - We do not
think well of the battery

Yours truly

Bergmann & Co.

1883-11-27

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
Nos. 298 TO 308 AVENUE

New York, Nov 27 1883
MS Menell
65 Fifth Ave City
Dear Sir,

In reply to yours
of 22^d inst, referring to
Sockets from Milan - would
say - That we cannot find
that we have shipped any com-
mon Key Sockets to this Co. - but
the samples which we have
received are undoubtedly of
our manufacture & if they
have received any they were
sent by some mistake -
They are in all respects
however as good, as far
as construction goes, as the
polished brass sockets - We
therefore decline to allow
them any more than 10¢
each per socket which
is more than the actual

1883-11-27

BERGMANN & CO.,
ELECTRICAL WORKS,
SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
Nos. 292 TO 298 AVENUE N.

New York, _____ 188

difference in cost &
if this is not satisfactory
to them, they can return
them to us (as many as
there are) and we will
give them full credit.

Yours truly,
Bergmann & Co.
K-

If they are returned please
instruct them to send
us the proper notification
so that we can get them
through the C. H. without
duty—

Phi

Nov 29/13

Mr J. P. Kelly -

You to send him
as sample.

Es sample -

Matteo

for Mr. Angelo

I Langhe Key
Dorchester

20th

RECEIVED
NOV 26 1883
PAID
Mr Fatt

1883-11-29
Nov 29/83

..... Please let us
Know what "sample"
Key sockets these are - I
do not know what is
meant & also send the
representation at same time

BERGMANN & CO.

PH Klein & -

1883-12-01

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
Nos. 292 TO 298 AVENUE

New York, Dec 1 1883

Mr. S. Howell
65 Fifth Ave N.Y.
Dear Sir
Yours of 30th ult
is received referring to dis-
count on fixtures for Tiffin.
As regards your own interest
and that of the Tiffin Company
in future prevents us from
giving more than 15% - discount.
If we are to do all the selling
there direct, we may go to the
limit sometimes. But if not,
we do not expect the Tiffin Co
to handle our goods for nothing.
When we come to deal with
them and they do the work con-
nected with getting the orders, we
shall allow them the full
discount as we do in other
similar cases.
As regards "the Shaw"

1883-12-01

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
Nos. 202 TO 208 AVENUE D.

New York, ... 188

and the draft of 30% be
mentioned, would say that
in the first place, we don't
know who "Mr. Shaw" is
+ in the second place, we
never allow 30% ~~more~~ and
we would be obliged if you
would notify "Mr. Shaw"
that in future, before mak-
ing ^{such} an assertion, he will
make sure, that he can
back it up afterwards.

Yours Very truly
Bergmann & Co.

1883-12-03

Bergmann & Co

What will you make
One dozen boxes containing
detector galvanometer cord &
fittings with box complete,
3 ~~junction~~ lamp
shak as made by Jno
att.

Edison

We will furnish 1 Dozen
of these as sample @ \$25.00 ea
net. complete

Dec 3/83

Bergmann & Co
T

1883-12-05

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF

FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Dec 5th 1883

Mr. J. M. Mull

Dear Sir, I am in receipt of your letter of 4th inst. is received -
 We begin by replying to say that we did know of Mr. P. C. Shaw but did not think that he was in any way connected with the Ohio Co, as we ^{only} knew him in connection with the Penn. Co & hardly thought it possible that it was the same Mr. Shaw who was mentioned in your letter. We certainly thought however that you would prefer to know about any matter of this kind yourself before we wrote to any of your correspondents about it and perhaps create an unpleasantness that would be very disagreeable to you & therefore beg that you will excuse our troubling you about the matter at all.
 Yours Very Truly, Bergmann & Co. Min.

1883-12-04

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF

FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Dec 4th 1883

Mr. J. M. Mull
 60 Fifth Ave
 Dear Sir

Yours of 4th inst referring to sundry orders is received. We are doing the best we can for your orders but having to make tools for some of the things and then bring every number changed - We are delayed on that etc. Expect however to make a good shipment in a day or two as Mr. S. has told you by telephone.
 Yours Truly

Bergmann & Co.
K

1883-12-05

BERGMANN & CO.,
ELECTRICAL WORKS,SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
Nos. 292 TO 298 AVENUE B.

New York, Dec 5 1883

The Edison Count Dept
City

Yours of 4th in reference
to Balance Sheet received
& will be attended to -
As to the "Hardware" subject
we are ~~complying~~ with your
request as far as possible -
but must request that you
allow us some leeway -
It will not do to mark
Presume dedication, glass
ware or the like as "Hard-
ware" that you may see
in our direction is likely
to be made up in losses at
age of the rough material
which freight marked as
"Hardware" gets at the hands
of the Baggage Smoother.

Yours truly Bergmann & Co.

1883-12-05

BERGMANN & CO.,
ELECTRICAL WORKS,SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.
Nos. 292 TO 298 AVENUE B.

New York, Dec 5 1883

Mr S. Inall
65 Fifth Ave

Yours of 4th in re-
ference to price of Cent Sta-
tion work received. Would
say that we cannot do bet-
ter than the price thereon
in our supplement less 3%
to you. Again we do not
sell these things to any
one but you. The best we can
do is to ask other more when
they want them, that is, to
allow them less than 30%
list - We are sorry the
matter was not brought
up before the price was pub-
lished so it could then have
been otherwise arranged.

Yours truly
Bergmann & Co.

BERGMANN & CO. 1283-12-06
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Dec 6. 1885

J. A. Edison

Dear Sir

When the gentleman from
Tiffin calls again we venture to say that we
will satisfy him. The brackets &c, we do not
think can be had from Mitchell Vance & Co
or any one else for much less than we have
offered them to him but we will see what can
be done to cut the expense down and still leave
a fixture practically as good. The main item
of expense however is the Centre Chandelier. The
gentleman particularly fancied the fixture
like the one sent to Albany but in 20 lights.
Now the price we made for that is cheap.
There is a good deal of work and elabor-
ation and ornamentation on it. We venture to
say that we can furnish another design
of fixture equally as well appearing
for 100⁰⁰ less. We will however
do our utmost to please Mr. Rogers
when he calls this evening as he
promised.

Yours truly
Bergmann & Co.

Corruwall Co.

1883-17-26
Ypsilanti Mich
Washtenaw Co

It is not known which is meant
by this inquiry - Corruwall or
Clark Corruwall. And both stockholders
in the Ypsilanti Machine Co. and variously
estimated worth from \$50,000 to \$100,000
Reputed to be of good reputation & C and
I believe to pay for the land that
I feel for you. I hope that you will

Dec 6/83

accept with benevolent eyes, being so
kind, the wishes of C. present to
you with the greatest sincerity.
Yours

1883-12-15

BERGMANN & CO.
ELECTRICAL WORKS,
SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York,

Dec 15 1883

Edison Constr. Dept
65 Fifth Ave
Brooklyn

Mr Sprague informs
us that they are very much in
need of the New Style Pressure
Indicators at Proctorton and we
do not find that we have any
order for them - Will you send
us an order?

Mr Floyd of Shamokin
was here yesterday & went thoroughly
through our works - He casually
mentioned the same trouble at
Shamokin.

We thought best to make
these suggestions -

Yours truly

Bergmann & Co

1823-12-15

BERGMANN & CO.
ELECTRICAL WORKS,

SOLD MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Dec 15 1883
Edison Constr. Dept -
Co. Fifth Ave
Dear Sir

Yours concerning the Sulph.
of Zinc is received. We understand
of course that you guarantee us
the trade of the Central Stations &
instruct them to get the same
from us. We will comply with
your request and keep the article
in stock on receipt of your reply
Yours truly

Bergmann & Co

P.S. Have just inquired of Mr. Chinnock
I find that he buys C.P. Sulph Zinc
for 12 cents and only gets 100 to 500 lbs
at a time. Therefore unless there is
a special reason for going to Powers
& Wroughtman, we would certainly
go where he does.

The Zinc P.W. furnished by Chinnock get
is much better than what we want. I don't understand
it is made especially for us - I want the C.P. brand & never change
it is made to get cheaper stuff - We shall not guarantee
that you will get anything but will accept all orders for us to buy
abroad - please answer if you understand E

1883-12-18

BERGMANN & CO.
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Dec 18 1883

J A Edison Construction Dept-
65 Fifth Ave, N.Y.

Dear Sir

The pressure of other matters has prevented us from replying to yours of the 18th ult enclosing bill against our Wiring Dept on acc of the Chamotkin Contract for \$362.34. We now beg to say that we cannot acknowledge this bill as it stands and desire you to consider our reasons for so doing and request your reply to them.

We have thought best to embody the same in a letter to the Chamotkin Co herewith inclosed, but send it to you for personal before hand. We would be obliged if you would forward the inclosed letter through, as soon as you have read it; unless you prefer to have the matter discussed in some other way.

Mr C. F. Hamington, who had charge of this contract for us, has given us the data on which we have based our reasons for not accepting the bill and in conclusion we can only say, that we are willing to do what we can, but would suggest that the most we can be expected to do is to pay half the bill.

Yours Very Truly Bergmann & Co. Klein

1883-12-18

Bergmann & Co. Electrical Works.

Copy.

New York, Dec. 18th, 1883.

Edison Electric Illum. Co.

Shamokin Pa.

Mr. Douty Pres.

Dear Sir:-

We have received a bill from Mr. T. A. Edison's Construction Dep't for \$362.34 charged to us they say because you have deducted that amount from their account in consequence of non-fulfillment of the entire contract made by our Wiring Department.

In reference to the item of tools, and also charges against us on account of work furnished to us by Mr. Johnson's order, we do not now wish to dispute your bill, and are willing to let that matter stand.

We desire however to take exception to the charge of \$289.92 for not setting 24 of the poles according to contract. Our men went there prepared to carry out the work according to specification and that they did not do so was no fault of ours. Poles were not put in according to the map in several places because the map located them, where it was impossible to erect them for various physical reasons, such as the presence of a stream of water on the spot, the impossibility of getting the permission of the owner of the premises on which the poles were to be placed.

This necessitated placing the poles in some instances further apart, thereby lessening the number of poles. In regard to the length of the lines, we ran actually 800 feet of conductors more than the order or plans called for and would be justified in rendering a bill for said extra work.

We would be obliged if you would send us an immediate reply.

Yours Very Respectfully,

Bergmann & Co.

K.

P. S.

The same applies of course to the item \$66.52 for digging poles.

1883-12-19

BERGMANN & CO.
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Dec 19 1883

J A Edison

Courts Dept -

Sir We have a letter from Mr Andrews
complaining about sending the wrong
kind of Lamp or Meters. There are
two kinds, differently standardized
~~with~~ A & B. Some of the orders
we have are marked. Please give
us the necessary particulars so that
we can specify in your order which
kind will be wanted - Specially
the one for Diffin - Is it to be A
or B.

Yours truly
Bergmann & Co.

Campbell
Please give me
list of numbers for
orders for back place
J A E

J. R. C.

1883-12-21

Referring to the attached, was this switch ordered for

Wall River. If not, please write an order on Bergmann & Co.

A. O. Tate,

December 21st, 1883.

per G.

712-12/21, C

17-3-12-20

BERGMANN & CO.
ELECTRICAL WORKS,
SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Dec. 20 1883

Mr Edison
Circuit Dept

Sir
Mr Andrews asks among
other things for Fall River, for
a switch like the O.S.
Feeder switches - Please
send us the necessary
specification & oblige

Yours truly

712. 12/21
Bergmann & Co

1883-12-21

BERGMANN & CO.,
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES & APPLIANCES FOR THE EDISON ELECTRIC LIGHT.

NO. 225 TO 228 AVENUE B.

New York, Dec 21, 1883

Madison Constr Dept
25 Fifth Ave

De Sir,
Yours of 19th with
request for Plat of Auto-
matic Regulator was
duly received & complied
with. Is it your in-
tention to return same
& when? Or do you
wish to keep it?

Yours truly

Wm H. Bergmann

Its for advertising
purpose in
get it back

1883-12-26

Form L.

THOMAS A. EDISON,
Central Station, Construction Dep't,
No. 65 FIFTH AVENUE,

New York, ~~December 20th~~, 1883

Messrs. Bergmann & Co.

City.

Dear Sirs:-

Have you sent the new style pressure indicators to
Brockton and Lawrence, in accordance with our letter of the 17th.
inst.? If not, will you please do so at once.

Yours truly,

Thomas A. Edison Constn. Dept.

By



*As soon as Indicator
lamps are received - these
will go.*

Bergmann & Co

These lamps are there

THOMAS A. EDISON,
Central Station, Construction Dep't.,
NO. 65 FIFTH AVENUE,

1883-12-27 Form H.

New York,

1883

12/27
Messrs. Bergmann & Co.
29 1/2 Ave. B.
City

Dear Sirs
You will oblige
by advising us as to the
date of shipment of order
#506. of 1st inst. and if not
forwarded when we may
expect them to be.
Your prompt attention
will oblige
Yours Very Respy.
T. A. Edison
Construct.

Order # 506.
1 to 64.

5 12 1/2
2 1/2 1/2
1 50 1/2

Shipped yesterday
15 1/2 1/2
5 12 1/2
2 1/2 1/2
1 50 1/2

Balance 95. 1/2
about 100. 1/2
B. K. K.
Dec 27

1883-12-31
BERGMANN & CO.
ELECTRICAL WORKS,

SOLE MANUFACTURERS OF
FIXTURES AND APPLIANCES
FOR THE
EDISON ELECTRIC LIGHT.

Nos. 292 TO 298 AVENUE B.

New York, Dec 31 1883

Mr Edison Esq
65 Fifth Ave. NY
Dear Sir

Supt C. E. Chinook refuses to pay
our bill for the Freeder Switches which
we worked on for the Central Station as he
says it was an experimental order and the
Expense should be borne by the Light Co.
We have spoken to Mr Clarke, who
is willing that it should be so charged.
If you could do anything to get us a re-
quisition from the Light Co so that we
can get our bill through, we would
be very much obliged.

Yours truly
Bergmann & Co

I think the Light Co
should pay it =
Dec 31 1883
Edison

(1883-12-

Bergmann and Co Electrical Works

Patented and Authorized Manufacturers of
Edison Electric Light Fixtures & Appliances
Combination (Electric Light and Gas) Fixtures & specially

Designs and Estimates furnished on Application
The most complete facilities for all kinds of
Electrical Work.

Also Sole Manufacturers of the Celebrated
Bergmann and Haide Battery
The Greatest Open Circuit Battery in the World
The Simplest, Cleanest, most Economical and
Most Durable of all

Open Circuit Batteries
It is small, neat, compact and very portable—see
cut, hermetically sealed and guaranteed
to form no gases—

Manufactory and Ware rooms—292-4-6 + 8 Ave B
New York—

Descriptive Catalogue and Circulars
mailed to Dealers and others on
application.

THOMAS A. EDISON,
No. 85 FIFTH AVENUE.

Bergmann (1883)

NEW YORK 188

Bergmann to send to Catalogue
to ~~the~~ ~~disc~~ ~~A~~ ~~Richard~~.
President of the Société d'Appareillage
Electrique Scherer Switzerland =

also one catalogue with discounts
marked thereon which discounts
shall be the same as that given
to the Edison E & Co here =

These people have been buying
sockets cut into etc from London
Co at advanced price Bergmann
can get this trade = They pay
very promptly through Edison Co
before shipment = give price

FOB = Don't fail in this
+ answer quick if you
will attend to this at
once

Edison

THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

(Bargman and Co?)

(1883)

NEW YORK, _____ 188

B. & Co.

5 pct 100 0 0 0 6

6 " 200 0 0 0 0

7 " 300 0 0 0 0

1000

Retail Biz - not exced
average profit 25 pct.
less than to get 10 pct.

Profit account

depend too proportionate
biz - 8 pct. arbitration

~~Present situation~~

Content 10 pct absolute
net on Ed not saved 25 pct
over

Never satisfied 20
wants 25 -

1883. Electric Light - Edison Company for Isolated Lighting (D-83-025)

This folder contains correspondence, reports, and other documents relating to the business of the Edison Company for Isolated Lighting, which sold and installed small power plants for the lighting of single buildings. Among the correspondents are Miller F. Moore, general manager of the company; Spencer Borden, agent for New England; and John Hoskin, agent for Delaware, New Jersey, and Pennsylvania. Related material can be found in the Primary Printed Collection (Company Records Series) and in D-83-040 (Electric Light - Thomas A. Edison Construction Department - General).

Approximately 90 percent of the documents have been filmed. Routine notices for meetings of the board of directors and a few routine items relating to the lighting of the steamship Pilgrim have not been filmed.



Edison Electric Light Company
AND
Edison Company for Isolated Lighting.

Box 3311, Boston, Mass.

Spencer Dodson, Manager
New England Department.

Boston, January 1st 1883

S. B. Eaton, Esq.

Dear Sir: I have noticed in the papers recently several notices of the Brush-Swan storage system; in those articles a claim is made that a high tension current is cheaper than a low tension on account of the great cost of our conductors. If this were the only factor to be considered, this claim might be of value, but one consideration occurs to me, which may offset this advantage. The current produced by the 40 Light dynamo measures only about 60 amperes. To produce this current, they allow 36 HP. As I understand the action of a secondary battery, the "formation" comes under the laws of electrolysis. By these laws, the deposition, or in this case, the formation will follow the formula - deposit = $\frac{\text{strength} \times \text{amperes} \times \text{seconds}}{1000}$ and will vary directly as the current. Our K machine with an expenditure of less than 30 HP produces about 187 amperes or more than 11 times the current for the same expenditure of energy or coal



Edison Electric Light Company

Box 331, Boston, Mass.

AND

Edison Company for Isolated Lighting.

Spencer Dodson, Manager

New England Department.

2,

Boston,

188

If the above premises (that the "formation" follows laws of electrolysis) are correct the saving in fuel, or, with the same expenditure, the increase in capacity, more than offsets the interest on the large conductors. Moreover this current can be used for the same purpose as the battery and apparatus do not wish the battery in the house, our current is available, and in all cases is perfectly safe. In the high tension system, the original generator cannot be utilized for the purpose of illumination except through the medium of a battery. You will pardon this suggestion, but as the matter is claiming so much of the attention of the public and is really of so much importance ~~that~~, I have ventured to call your attention, as above. Of course, if the laws of electrolysis are not applicable, this falls through.

Very Resp. Yours
Simeon B. Davis



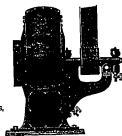
B. F. STURTEVANT,

PATENTEE AND SOLE MANUFACTURER OF THE

STURTEVANT BLOWER, & EXHAUST FAN,

FOR CUPOLA FURNACES, FORGES,
STEAM BOILERS, HEATING FURNACES,
DRYING WOOL, COTTON, ETC., AND FOR
PURPOSES OF VENTILATION.

FOR CARRYING OFF SHAVINGS
AND SAWDUST, DUST FROM SAND
AND EMERY WHEELS, REMOVING GAS,
SMOKE AND ALL NOXIOUS FUMES.



SALESROOM, 156, 158, 160 and 162 OLIVER, COR. PURCHASE STS.

Office and Factory at Jamaica Plain Station, on B. & P. R. R., Ward 23.

Boston, Jan 3^d 1883

J. S. Edison Esq., Will meet him
65 Fifth Ave., any PM next week
New York. at Laborsaving

My dear friend:

I duly received the letter of your Secy stating that my letter to you had been forwarded to Mr. Spencer Borden of this city, and after waiting for a reply I addressed Mr. B. & wrote asking if he had anything to say; to this also I have no reply. I naturally suppose that Mr. Borden wants nothing of me & that my application had gone the way of all such. I have had much to do with applicants, & well know that the bulk of them do not possess the "snap" required to fill places; and being for the first time on the other side of the fence, you may be sure that there is no short coming in my case.

I will state briefly that what I would like is an agency, and can refer you to

parties who will testify to my ability
to fill such in a satisfactory manner.
My daily intercourse with able
factories to which you in your
business would naturally wish to
reach would add to my efficiency
in this respect, and you may be sure
that there would be no lack of zeal
on my part.

I have grown considerably since
you knew me.

I now beg the favor of a 15 mins.
personal interview with you on some
day next week - or any other time -
I will feel obliged if you will allow
your boy to drop me a line stating
the day and the hour when I may
see you. Will you grant this favor?
Yours truly,
W. H. Allen.

John H. Beyer,
Secretary of Treasury,
Goldfinch Street,
New York City.
Gen. J. B. Smith,
New York City.

P. O. Box 1836

80 1883-01-15
New York, January 15th, 1883

My dear Mr. Beyer:

I return you herewith Mr. Painter's letter of the 30th or 20th Decr (I cannot make out the date with certainty). I am ready and desirous to do for Mr. Painter all that I have ever promised; notwithstanding so much time has elapsed during which neither Mr. Painter nor anybody for him has ever come to me to receive and pay for stock. It is but a short time since that you informed me when walking in the street one day that Mr. Painter wanted fifteen shares of Isolated stock. I then expressed to you my surprise at the amount and told you that either Mr. Painter or yourself, or perhaps Mr. Edison, had, before I volunteered to meet Mr. Painter's requirements, informed me that it was four or five shares that he was entitled to have. My impression is that it was Mr. Painter that told me this on the only occasion that I have ever spoken to him upon the subject; but I cannot remember with certainty. I then told you that I would divide this with Mr. Edison in the proportion in which we are interested in the Isolated Company.

I am still ready, notwithstanding nearly two years have elapsed, to do my full share towards satisfying Mr. Painter's

I recognize as an important friend of our Company and for whom besides that I have very kind feelings. I must however protest against the terms of Mr Painter's letter when he says, "But inasmuch as it was yours and Mr Lowrey's agreement to fix it for me, on condition of my releasing my claims on the stock then in the treasury of the company on which I had a lawful claim &c. &c." No one ever mentioned to me before that there was any stock in the treasury, or, if there was, that Mr Painter had any claim upon it; nor did I ever make any promise to Mr Painter upon any consideration or condition whatever. When I learned that he, an important friend of our interests, had lost the opportunity to take his share of stock, and also learned that ⁴⁴⁴²⁸ he claimed was about four or five shares, I voluntarily out of pure good nature engaged to see that he had it, and I am still ready to keep that promise and perhaps even to do more; but I cannot allow this matter to be turned into the shape of a legal obligation.

Mr Painter will have no cause whatever to complain of me if he comes to me. I expected to have seen him on Friday or Saturday.

Let us have this matter ended right away, because I may not forever continue in a position to do anything in respect to it.

- (1) How many shares does Mr Painter ask for?
- (2) How many of those shares (above the number of five)

1883-01-15

3

will Mr. Edison supply?

(3) When will Mr. Painter be ready to take them?

I wish you to send this letter to him, so that he may
know just what it is I say.

Very truly yours,



Sam'l I. Merrill Esq.

65 Fifth Avenue,

New York City.



Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

1883-01-24
Box 331, Boston, Mass.

Sprucey Borden, Manager
New England Department.

Boston, January 24, 1883.

My dear Sir:

I had a call from Mr Kiwan yesterday, and
I don't know what you did to him in New York,
but he is the most enthusiastic Edison man I
have met this many a day. He says he will
make an article about 6 Columns long for the
Sunday Herald, and it will be the greatest
sensation the paper has ever published.

This morning he sent his wife here to
tell me he is working on it at home, and
will have it ready to-morrow morning.

I will therefore send Mr Stickney right to
New York with it, let you look it through, &
he can bring it back. He will meet you at
#65 Fifth Avenue to-morrow evening at 8 o'clock.

I wish Bergmann could also meet him
there, as a number of small parts are missing
for White's store, and Stickney and he could
go straight to Avenue B., get what is re-
quired and Stickney bring them back with him.

J. D. Edison, Esq.
New York

Yours very truly
Sprucey Borden

Industrial Company
Mr. Edison,

1883-01-30

Greenfield has finished his estimate on C. W. Field's building. It is as follows:

Labor \$4,890

Material \$3282

Vertical main \$1,410

The whole bill is about \$9,400. It is for 2973 lamps. This is \$3.15 a lamp. There is a profit for us of 25-30 percent per lamp at a maximum. This is 90 cents per lamp more expensive than the Mills Building was. Greenfield says

the conditions are different which accounts for that.

Jan 30 1883

J. B. Eaton

1883-02-03

SOCIÉTÉ INDUSTRIELLE ET COMMERCIALE EDISON

Société Anonyme, Capital: 1,500,000 Francs

EXPOSITION INTERNATIONALE D'ÉLECTRICITÉ

Grand Diplôme 432
d'honneur
PARIS 1881

Ivry-sur-Seine. le

FEB 3 1883

My dear Edison,

Enclosed please find
Powers of Attorney for myself and wife in
matters relating to the Edison Company
for isolated lighting as requested in
letter of Bureau of 10th of Jan.

Very respectfully yours
Chas. Batchelor

THE EDISON COMPANY
FOR ISOLATED LIGHTING.

1883-02-05
GENERAL MANAGER'S OFFICE.

65 FIFTH AVENUE.

Please address reply to the undersigned.

New York,

Feb 5th 1883

Thomas A. Edison Esq.

Dear Sir:

We are intensely
out of "B" machines and
would suggest that you
make up some of that
size. First after testing
the "model" machines

Yours Truly
W. F. Johnson
Genl Manager

LOW PRICED LIGHTING
THE EDISON COMPANY

65 FIFTH AVENUE
GENERAL MANAGER'S OFFICE

THE EDISON COMPANY }
FOR ISOLATED LIGHTING. }

1883-07 05
GENERAL MANAGER'S OFFICE,
65 FIFTH AVENUE.

Please address reply to the undersigned.

New York,

July 5th 1883

Mr. Edison

We ran last night
and also Saturday at Raven
for five hours 1371-10 cfs.
lamps from one machine
with light divisions in the
resistances without any spark
at brushes and with less
heat in armature than we
have with the ordinary 18
with 250-16 cfs lamp.

Tonight I expect to have over
400 lamps in circuit running
two machines. I was a little
apprehensive about one line
on Saturday there was a thick
coating of sleet on them but
they stood all right.

Yours truly,
Frank B. Brown



Answer to the Dept. Mgr.
Edison Electric Light Company
 AND
Edison Company for Isolated Lighting.

1883-02-07
 Box 331, Boston, Mass.

Superior Battery Manager
 New England Department.

Boston, February 7th, 1883.

*J. A. Edison, Esq.,
 New Sir:*

Enclosed herewith please find letter from Mr Klein which hardly meets the necessities of the case at the Slater Cotton Company. This plant is in a very delicate condition, so much so that I am keeping Francis there right along, his tact and good sense being such that I hope we may pull through. They have been breaking a terrible number of lamps there, partly their fault, partly ours, and the installation is balancing between dissatisfaction and an order to change ZL's for ZK's. By good management I hope it may come to the increased order, and the indicator is one of the means by which I hope to succeed. So it is very unfortunate the thing would not work, and rather than send it back to New York, either one should be sent from there that will work, or a man be sent to make this one go.

Last night we went to Dedham. Our men are canvassing but it is rather slow work.



Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

1883-02-07
Box 331, Boston, Mass.

Symner Borden, Manager
New England Department.

Boston, (2.) 188

I send by express an outline map of the City from which you can get distances etc. We are drawing a good plan made 50 ft. to the inch, but I send this to settle a question that arose between Mr Garrison and myself, namely, whether or not the estimate for wiring (conductors) was made to cover a district as large as the whole laid out on this map, with about equal distribution, or if it would allow of a district no larger than from Bay Prospect St. to Winthrop & Lawrence. The station will lie somewhere about Crescent St.

The Advertiser people want to move on Saturday, and Mr Steadley has assured Mr Felt he should leave his fixtures from New York. I hope they will not fail to come forward.

Our other matter and I will not trouble you further. Our man Francis you know is a man I have much confidence in. We are going to need more good men, and Francis has a brother in the Machine Work. Whom he thinks would make



Edison Electric Light Company
AND
Edison Company for Isolated Lighting.

1873-02-07
Box 3311, Boston, Mass.

Spencer Borden, Manager
New England Department.

Boston: 3 188

me a good man. Before graduating he wants to
work in the testing department under Mr Andrews.
And I write you to see if he can be put to work
there in anticipation of his services being needed.

Yours very truly
Borden.

THE EDISON COMPANY
FOR ISOLATED LIGHTING.
—New York—

OFFICE
OF

—AGENCY—

States of Pennsylvania, New Jersey & Delaware,
ROOM 6 LEDGER BUILDING, [9th & Chestnut Sts.]

1883-02-13
FORM A. 2.

Answer of
Feb 14

Philadelphia, Feb 13 1883

Thomas A. Edison Esq
New York } Dear Sir,

Mr Sterns called on me today, requesting me to present his compliments to you, & to invite you to witness an exhibition of the Gas Engine, either on Friday (16th) or Saturday (17th), at best suits your convenience — Please send word which evening suits you best —

Mr Sterns also sends a similar invitation for Monday evening (19th) — when a number of gentlemen interested in gas will be expected.

It is for this reason that Mr Sterns proposes to make his invitation solely to yourself & friends, not to mingle it with the gas interest.

I have written Major Eaton also on the subject — He has also reported on the Engine — not yet in perfect order, but when doing its work runs our lights very steadily.

Enclose copy of our memo last night report.

Yours Very Respectfully
John Lockin



Count ~~your~~ ~~to~~ go

E

to 9883-02-1
Boston Bijou Theatre Company

645-WASHINGTON STREET-645

T. N. HASTINGS, PRES. *After* E. H. HASTINGS, TREAS.
GEORGE H. TYLER, GEN'L. MANAGER.

Boston, Feb-18/4 1889

Phil A. Edison Esq

Dear Sir

"I was sorry I -
- did not see you - when you was
here - as I wanted to have a chat
with you - I am at the Theatre
managing while Mr Hastings is
in Europe - I do hope you will let
us have - the New Regulator - you
have promised to bring - I am in constant
fear - of trouble with the one we now
have - Mr Fitch who is here - will
be in New York next week - he will
explain matters fully - we also
want some of your New Safety
Plugs - we had some trouble
the other night with one -

1883 02-18
Boston Bijou Theatre Company

645-WASHINGTON STREET-645

T. N. HASTINGS, PRES. E. H. HASTINGS, TREAS.
GEORGE H. TYLER, GEN'L. MANAGER.

(2) Boston, 1888

we also are anxious - about
the new light - to replace the Calceum
which is such a nuisance -
Do try and help us out -
See Fitch on his arrival he will
help you - fully know matters here -

Yours Truly

Geo H. Tyler

Ans'd
27th

9 1773-02-22

Feb. 22, 83

Pariter

W O B

2-22-83

\$6.25

When answer
do you want check for
my Isatis stock?

I will send it any time!

Starts day with Edison here
very pleasantly & remains
off yesterday noon!

Yours
W O B
Pariter

THE EDISON COMPANY
FOR ISOLATED LIGHTING.

1883.03.02
GENERAL MANAGER'S OFFICE,
66 FIFTH AVENUE.

Please address reply to the undersigned.

New York, March 2nd--1883

STANDARD

Thomas A. Edison Esq

Present.

Dear Sir:-

The Baltimore Sun people want a new *k* Machine and will take no other as I promised they should have a new one. Why not send the experimental Machine you have at Goerck Street to them at once. The engine is installed and they are all ready and waiting for the dynamo. Please let me know about this or issue the proper instructions to Mr Dean

Very truly yours,

M. J. Morone

~~Max Kxx Kxx~~ General Manager

*I John Callahan be don't
want it will
let you have it*



1883-03-03.

Box 331, Boston, Mass.

Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

Spencer Borden, Manager
New England Department.
Herald Building.

Boston, March 3, 1883.

Mr S. A. Edison,

My Sir:

Enclosed herewith find letter from Prof. Croves of
Technology. Mr Gale is a pleasant and in-
telligent fellow, who wants to make these incandescent
lamp tests the basis of his graduating thesis.

I found I gave him some points that were new
to him, and, as I have no idea Croves is so well posted
in such matters as he should be, and the tests are to be
made public, I shall send Mr Gale to New York with
Mr Stickney, who goes Monday night on other busi-
ness; and I would thank you if you could give him an
hour and then turn him over to Howell, who
can put him thoroughly, also giving Howell
instructions to select some good lamps for
Mr Gale's tests.

Yours very truly
Spencer Borden.

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-03-09

New York,

Mar 9th 1883

Thos. A. Edison Esq

Dear Sir

I have been talking with
Mr. Moore about automatic
Regulators, and he thinks that
in Isolated Plants where two
or more H or L Dynamos are
used on one circuit, that it
will be advisable to keep all
the fields constantly charged, as
the loss of current will be but
small, and accidents by way
of short circuiting on armatures
thus rendered impossible - If
this plan is adopted - Bergmann
need not make any change
in the automatic regulators
as if the fields are kept on
(all the time)

One set of resistance will always
remain effective —

This will save putting any
more money in Regulators, and
will overcome rather a saving
thing.

I will be up to Pergmann's
tomorrow morning, and will
see you about this matter.

Reply Yours

W. S. Andrews

64
Mar 9/15
W. S. Andrews
re the
automatic
regulators

THE EDISON COMPANY }
FOR ISOLATED LIGHTING. }

Please address reply to the undersigned.

1883-03-27
SUPERINTENDENT'S OFFICE,

No. 97 SIXTH AVENUE,

New York,

March 27, 1883

Dear Sir,

The trial trip of
the steamer "Pilgrim" will take
place on Wednesday, March 28.

The steamer will leave
the dock foot of East Ninth st.
at eleven o'clock A. M.

You are cordially invited
to be present.

Yours respectfully,

J. H. Wall

To
S. Insull Esq



1883-04-11
Box 3311, Boston, Mass.

Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

Spencer Hadley, Manager
New England Department.
Fidelity Building.

Boston, April 11th, 1883

J. H. Edison, Esq.
Dear Sir,

Enclosed herewith please find letter from Hutchinson
on a subject we talked about, last time I was in
New York. I send it to you knowing your feelings in
the matter.

This isn't right. Two L machines only sell for
\$4000., they will run 325 lights easily, and the pub-
lic can see that the new machine doesn't cost more
the price of an L to make. A K and a Z only
amounts to \$4200., and the new machine costs but
little more than the old K.

It is for my interest to get all I can for
apparatus, and I shall do all I can to sell the ma-
chines at whatever price is fixed on them; but
the public should have some of the benefit of
these improvements, and the agents of the Isolated
Company should have the corresponding advantage.
The increased capacity of the machine would give
them over other competitors. The fact is that



1883-04-11
Edison Electric Light Company

Box 3311, Boston, Mass.

AND

Edison Company for Isolated Lighting.

Spencer Borden, Manager
New England Department.
Herald Building.

Boston, 2 188

No one would object to paying \$500. for the machine, but \$400. is a greater proportionate increase than that between the L and I, and the I and K.

I feel certain my remarks meet your views. It is awfully short-sighted policy to squander all that can be gotten out of the public, and more money can be made on the new machines at \$300. than at \$400.

If my advice has any influence you will insist that your former correct views prevail, and no illustrated or other Catalogue of the new machine at a higher price than \$300.

Stick to your left! You are right!

Yours very truly

Borden.

I gave your letter to Mr. Shaw. He was much pleased and kept it for the autograph. He says he will do all he can to, give us good sport.

Form 2.

1883-04-13

MUTUAL UNION TELEGRAPH COMPANY.

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been accepted by the sender of the following message.

Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the **Unrepeated Message**, and is delivered by request of the sender, under the conditions named above.

JOHN G. MOORE, President.

THOS. C. PURDY, Gen'l Manager.

CHAS. F. PECK, Secretary.

NUMBER	32	RECEIVED BY	27	CHARGE	paid 59
Date	Boston Mass			Rec'd at	850 BROADWAY,
To	Y. A. Edinow			Rec'd at	NEAR 14th STREET.
					188

65 Fifth Avenue
 Q. machine too heavy to move. Please
 scenes. If we can get E. We have
 Q. machine here answer - when
 you can tell exactly about E -
 machine. Borden

READ THE NOTICE AT THE TOP.

Form 2.

1883-04-14

MUTUAL UNION TELEGRAPH COMPANY.

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been accepted by the sender of the following message.

Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the **Unrepeated Message**, and is delivered by request of the sender, under the conditions named above.

JOHN G. MOORE, President.

THOS. C. PURDY, Gen'l Manager.

CHAS. F. PECK, Secretary.

NUMBER	31	RECEIVED BY	24	CHARGE	paid 47-
Date	Boston Mass -			Rec'd at	850 BROADWAY,
To	Y. A. Edinow			Rec'd at	NEAR 14th STREET.
					188

65 Fifth Ave
 Why cannot this buck machine I
 traded to isolated company be used.
 as motor at below - It is in supply
 department Borden.

READ THE NOTICE AT THE TOP.

Form 2.

1883-04-16

MUTUAL UNION TELEGRAPH COMPANY.

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been assented to by the sender of the following message.

Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within **seven days** after receiving the message.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

JOHN G. MOORE, President.**THOS. C. PURDY, Gen'l Manager.****CHAS. F. PECK, Secretary.**

NUMBER	SENT BY	RECD BY	CHECK
54	Mr An	16 Collect	25 730
Dated	Boston 16		850 BROADWAY,
To	S. Insell		NEAR 14th STREET.
			Apr 16 1883
65 Fifth ave			
Motor to small spencer			
borden will loan			
Dynamite			
J. F. Ott			

READ THE NOTICE AT THE TOP.

THE EDISON COMPANY }
FOR ISOLATED LIGHTING. }

1883-04-20
GENERAL MANAGER'S OFFICE,
65 FIFTH AVENUE.

Please address reply to the undersigned.

New York, Apr. 20th 1883

Thos. A. Edison Esq.
65 5th Avenue
New York City

Dear Sir:

Answering your inquiry
as to cost of dynamo machines
and engines for plants of 350
700, and 1050 lamps respectively,
I beg to submit the following:

350 Light Plant

Dynamo lamps sockets and automatic regulator	\$ 4,000.
1 9 1/2 x 12 Lawrence Engine	1,200.
Engine Foundation	175.
and 10-inch Double Belt	241.
Dynamo Foundation	12.
Steam Exhaust Piping	1 1/2 x 1/2 x 1/2
Steam Pipe covering and dentials	65.
	\$ 5,608

700 Light Plant

Dynamo lamps &c.	8,000.
1 12 1/2 x 20 Lawrence Engine	1,975.
Foundation	350.
2 10" Double Belts	114.
Dynamo Foundation	24.
Steam Exhaust Piping Covering and incidentals	200.
	\$ 10,718

THE EDISON COMPANY
FOR ISOLATED LIGHTING.

Edison

1883-04-20
GENERAL MANAGER'S OFFICE,
65 FIFTH AVENUE,

Please address reply to the undersigned.

New York, ... 188

1050 Lamps

Dynamos Lamps Sockets &c.

\$12,000.

1 1/2 x 20 Lawrence Engine

1,975.

1 9/2 x 12 "

1,200.

Foundations

525.

2 10-in Double Belts

185.

Dynamos Foundation

36.

Steam Exhaust Pipe

275.

Steam Pipe Coving and

114

Incidentals

\$16,276.

Very truly

FOR M. F. BROWN, GENERAL MANAGER

J. P. Carson

THE EDISON COMPANY }
FOR ISOLATED LIGHTING.

SECRETARY'S OFFICE,
65 FIFTH AVENUE.

New York, April 1883

J. A. Edison Esq. Present.
Dear Sir:

The question of weight
interferes with our procuring
the balances of steamers of Old
Calong Steamboat Co. Will
you please give me the minimum
weight of two dynamos of a
combined capacity of 400 lamps,
about 320 amperes and 2000.
I will try and reduce weight
of engines by having larger
cylinders on small engines.

Yours
J. Hutchinson

Reduce weight of Engine by increasing
speed - Use 10 cp lights for steamers
a single 200 lb machine should do
the work & can give better extra margin by E
adding inch to dia of cylinder

314 LIVINGSTON STREET,

1883-05-04

BROOKLYN, N. Y., May 4 1883

Mr. Wm. G. Leavitt

Dear Sir

I sent Mr. Leavitt
the list of apparatus you sketched and
he is under the impression that the
Dynamo you include would "light the
Institute". We use 300 gas lights
in the Reading Room alone and
700 in the top floor alone. If my
impression that the capacity of
that dynamo is limited to 300
lamps is correct then it would
light but a limited space in the
building. Besides I do not see
how it can be used for instruction
purposes when at the very time the
students would want to experiment
with it, it would be running on
the lamps in the building. Please
advise if above is incorrect. Yours sincerely,
W. G. Leavitt.

1883-04-04

RECEIVED

Mr. Edison,

If Teall is going to attend to our business he had better get some new letter heading and not do his business on the letter heading of Arnoux, Hochausen & Co. Regarding Mr. May, he does not state the contents of my letter correctly. I wrote Teall that May claimed to have worked up 4 plants in Syracuse, and that if it turned out that May had done valuable work in connection with these 4 plants, his rights must be regarded in connection with a commission on these four isolated plants. I am trying to get from May a list of the isolated plants in question, and will send the list to Teall.

S. R. Eaton,

May 7th. 1883.

per Mc.C.

C

These envelopes must be sent in some way to the
Henderson House, 100 South 1st St. St. Louis, Mo.
These envelopes must be sent in some way to the
Henderson House, 100 South 1st St. St. Louis, Mo.

RIC LIGHT CO.,
405 BUILDING.

T. H. TEALL, Ag't for
New York State.

4 Union St, Syracuse.

1883-04-04

Syracuse 4/4 1883

*T. A. Edison Esq
65 Fifth Ave. N.Y.*

Dear Sir:

I take the liberty of addressing you
as all my business was with you & through you I
rec'd my appointment. I received Monday a letter from
Pres. Eaton informing me that this city had been
given to a Mr. Teall & that I must write subject to him.

I wrote Monday enclosing drawing of a Manufactory
which I know but never thought asking an estimate
for lighting, also asking instructions regarding the
organization of a local Co. I have with several
regarding the matter & believe such can easily be
perfected, but I want to know before I start. If you
will please inform me what I am to do. I have
waited all this week expecting to hear receive
pamphlets & promises. If you have any other
estimates for central stations please send.

Please
Respectfully
T. H. Teall

1883-05-17

OFFICE OF THE AGENCY

THE EDISON COMPANY FOR ISOLATED LIGHTING,

No. 6 LEDGER BUILDING,

Ninth and Chestnut Sts.

JOHN HOSKIN

Agent for the
States of Pennsylvania, New Jersey,
and Delaware.

Philadelphia, May 17, 1883

Thomas A. Edison Esq
New York Dear Sir

In reply to your enquiry of 16th inst. respecting the number of Incandescent Maxim plants in the bounds of my agency, I only know of the following viz The Mf. Mint - The Mf. Post-office - Messrs John Wyeth & Bro (Manufacturers), all in this city. and Messrs Pierce & Co (Wool Yarns) Bristol, Pa.

I am not aware that there is any Maxim Incandescent Candle Station system in operation herein - Nor that any one has thrown this Maxim Incand. plant out of use in this territory.

The Mf. Mint lighting has been very poor, but it is alleged ^{surmised} that political afflictions have kept it in -

The Mf. Postmaster has not admired his lamps till this week, when new lamps having been issued (as I learn, privately) the light is brighter, & he is so much better pleased that he is today I think in favor of the lamp.

Messrs Wyeth & Bro, were injured last summer after two small fires (Paraffined wire) a new engine given them, & again a larger engine supplied in the winter which is now idle till they can fix up - I am promised indicator cards when they start up - I hear their Electro is costing \$300 to get \$275

Yours Very Respectfully
John Hoskin Esq



GENL. MANAGERS OFFICE,
65 FIFTH AVENUE, NEW YORK.

Please address reply to the undersigned.

THE EDISON COMPANY FOR ISOLATED LIGHTING,
OF NEW YORK.

OHIO AGENT

ROOM 26, BLACKSTONE BUILDING,

FILE No.

RECEIVED

MAY 19 1883

ANSWERED

Cleveland, May 1st 1883

Thos. A. Edison, Esq.

Dear Sir,

Your favor of yesterday just at hand. Contents carefully noted. The Shops of the Cleveland Mt Vernon, & Delaware, O.R. are located at Mt Vernon, Knox County, O. Geo. S. Walker is the Receiver of this R.R. Company. W. Monsarrat, the Genl. Supt. - H. M. Taylor, the Master Mechanic. The General Offices are at Akron, Summit Co. O. - Installed in these Shops is the only Maxim Incandescent Plant in the district assigned to me. - of which I have knowledge.

Mr Monsarrat informed me that said Plant was what is called a Maxim Fifty (50) Light Plant, but that they had about

Seventy (70) lamps in circuit. The whole
installment at M.V. consists of: ---

Ten light Arc machines: Fifteen Weston
Arcs in circuit.

Fifty " Maxim or Incandescent machines;
Seventy " lamps
in circuit.

I have understood that the U.S.C. in-
tend to install an Incandescent plant at
Toledo, O. I will ascertain just what
has been done at T. to date, and if any
Maxim work has been commenced, will
immediately advise you.

Very Truly Yours,

Geo. Skarlatos Jr.

To Know if the

Incandescent gives safety
of its on trial or has been
paid for

42.
May 17/83

G.O. Stanbuck

11-the Cleveland

East. Union

Delaware

Incandescent

Plant

1883-05-17

RECEIVED

MAY 19 1883

ANSWERED

EDISON ELECTRIC LIGHT COMPANY,
AND
EDISON COMPANY FOR ISOLATED LIGHTING.

231 Main Street, Room 7.

SPENCER BORDEN, Manager,
New England Department,
BOSTON.

GEORGE D. BANCROFT, Agent,
West Springfield, Mass.

FILE NO.

SPRINGFIELD, MASS.

1883.

How End This Letter to Meadcroft
May 17

Thomas A. Edison Esq.
65 Fifth ave.
New York.

Dear Sir:

In reply to your favor of May 16 I have the honor to report that in the portion of New England west of Worcester and north of Hartford I can learn that but one installation of Maxim incandiscent lamps has been ^{made} though I know of two private trials of very small numbers of lamps of this manufacture. These cases, however, I do not suppose are of sufficient importance to report upon as they were small and temporary. Late last winter

1883-05-17 2

The New England Weston Co. of Boston installed a plant consisting of one Weston dynamo and forty Maxim lamps, with a regulator closely resembling your resistance box, in the Newton Paper Co. mill at Holyoke. After a great deal of trouble it was got in operation & was kept running by the N.E. Co's men for nearly two months.

During this time accidents of various kinds were so frequent that the Weston Co. became satisfied that the plant would never work satisfactorily in their hands so they declined to pay the bill and ordered the plant removed. The N.E. Weston Co. insists that the installation is a success; declines to remove the plant and is now trying to collect the bill which the Weston

1883-05-173

C. have no idea of paying.

On the 5th. instant a
suit for \$10,000 was brought
against the Holyoke concern
by the N.E. Weston & Co. and the
mill of the former attached
for that amount.

The Newtons are disinclined
to any compromise so it seems
quite probable that the failure
will be fully exposed in court.

I know of nothing else in
this section that would come
under either of the heads of
your letter but I can supply
you with more exact informa-
tion as to the Newton plant
if you desire it.

I think it may be worth
your while to see Mr. Meadow-
croft about a Mr. Stokeman of
whom I wrote to him last summer.

Respectfully,

Geo. D. Bancroft

1883-05-22

May 22nd. 1883.

Mr. Edison:-The enclosed letter comes from a very influential leather manufacturer down in the swamp. If it is a possible thing to furnish them with a motor capable of developing the power required, I should be very glad if you can inform me how soon it could be made, and what would be the cost etc. This would be a very good place to put in a motor if one can be had. What information can I give them?

F. S. Hastings.

per D.

1883-05-17

HANS REES' SONS,
COMMISSION MERCHANTS
DEALERS IN HIDES & LEATHER

37 FERRY STREET.

Norman J. Rees
Frank Rees

New York May 17 1883.

M. Edison Electric Light & Power Co.

Gentlemen:

We understand you are contemplating furnishing power as well as light in this district. If so will you let us know how soon power can be furnished, as we want to make some arrangements for lighting residences. Would you give us any idea of the cost of putting in electric engine &c. capable of hourly pay \$200.00 at a low rate, also cost of running, and oblige.

Yours truly
Hans Rees' Sons

1883-05-22

The Edison Company for Isolated Lighting
of New York.

RECEIVED
MAY 25 1883
ANSWERED

.....183...
FILE NO.

VIRGINIA AGENCY. ✓
Richmond "

11 NORTH TENTH STREET
734-3rd St.

Richmond Va.,
Louisville Ky

Mr Thos A Edison
No 65 Traft and N.Y.Cts

Dear Sir:-

On my return from Virginia
I find yours of May 16th awaiting me.

There are no "maxim incandescent
light plants in my territory, except
the one on the Steamer Mill. S. Hayo.
It consists of 108 lamps. The Plant has
not been giving satisfaction until the
last day ago when it worked better.

The boat is owned in Pittsburg Pa and
runs between Cincinnati and New Orleans

The Local M. S. Company here
has an incandescent machine at their
Central Station, but they have not wired
it or are they running it. Capt S Miller
the Treasurer of the Company told that

1883-05-22

The Edison Company for Incandescent Lighting
of New York.

VIRGINIA AGENCY.

4 NORTH TENTH STREET.

Richmond, Va., May 22 1883

When Hubbard the Pres. of the U. S. Company was here, he asked him about buying more incandescent machines. Hubbard advised him to wait awhile, saying "they were making great improvements in them".

I have made an estimate of Capt. Millers wooden mill, and I think I shall sell him an "H" machine.

Whenever they hear of my making an estimate they always try to get the contract, and usually estimate under me.

If any plants are sold I shall advise you.

Yours Truly
W. D. Weston. Atty

1883-05-22

RECEIVED
MAY 25 1883
ANSWERED

MAY 24/83
FILE NO.....

Cass Hae + Chambers of
Cincinnati May 20th/83
Mr. A. Edison Esq.

Dear Sir

Your favor of the 16th inst. was duly received. I have delayed replying in order if possible to learn of any Maxin plants that might be in operation in my Territory outside of Cincinnati. But as yet have not heard of any such, either Central Station or Isolated.

There are three Maxin Incandescents Isolated Plants in operation in Cincinnati, one of which with 300 lamps and dynamo capacity 150, used by the Hall Safe & Lock Co. 11 W. on Plum & Pearl Sts. sold to them at considerably under price, and now claimed at a loss. Another with 20 lamps at the Robt. J. Morris Printing Works 65 Vine St.

and the other with 72 lamps at the
Deming House (Hotel) owned by Mr.
A. Deming. This one has not been
accepted, and may not be.
The Commercial Gazette N.E. cor 4th
& Race St. had a plant with 20 Maxim
lamps, which has lately been taken
out, as it could not be satisfactorily
run with their power.

The Maxim lamps are
also on two Steamboats running between
Cincinnati & New Orleans, viz: the Will
S. Hays Capt. Wm. C. Schemer and the
Guiding Star Capt. J. D. Egler.

The Excelsior Co. of New York
are making an effort here to raise a Co.
for the State of Ohio to supply Arc &
Incandescent lights from one machine,
and are putting their apparatus in the
Highland House at their own expense.
For exhibition, it is offered for the Deming
House at 3 1/2 per cent less than the Maxim.

I will be pleased to give you any
further information in my power that
you may desire. Yours respectfully
J. S. Hough

1883-05-23

Form A 4

OFFICE OF THE AGENCY

THE EDISON COMPANY FOR ISOLATED LIGHTING,

No. 6 LEDGER BUILDING,

Sixth and Chestnut Sts.

JOHN HOSKIN,
agent for the
States of Pennsylvania, New Jersey
and Delaware

Philadelphia, May 23 1883
Better see for it
Thomas A. Edison Esq

RECEIVED

MAY 24 1883

ANSWERED

hated New York
Mr. Edison
you cant
FILE No.

I am very much obliged for
your note of yesterday, respecting the
dye house you saw, which used popman
gas fits down low enough

I have no doubt but that you saw
J. J. Robson's carpet works, using
about 2400 lamps - unluckily they
have their own gas works on the premises
and I have failed to sell them a "B"
dynamo, because they make gas so cheaply
that they will not try anything else -

With best thanks I am

Yours very Respectfully
John Hoskin

#65- 5th Ave New York 1883-05-23
May 23rd 1883

J. A. Edison Esq
Dear Sir

Your favor of the 16th inst
duly rec^d - Contents fully noted -

The territory worked by me comprises
- as "Long Island" and New York City -

There is not and never has been to my
knowledge a "Maxim Incandescent Light Plant"
worked on Long Island -

Respecting New York City I beg to sub-
mit the following report -

Equitable Life Assurance Co Bldg
120 Broadway

They have 6 dynamos for "Incandescent" &
1 for "Arc" lights - seven altogether, driven
by a "Wright - Corliss" Horizontal engine.
Has given the following particulars. Building
said to be wired for 450 lamps - Engine
20 x 42" stroke 72 revolutions 65 pounds
initial pressure, developing about 150 HP
Speed of dynamos 1250.

Of course it is well known that the
officers of this Company are active pro-
moters of the Maxim incandescent and
other systems of the U. S. E. L. Co

open 12 1/2 hrs
productive power 6000 to 8000 gals. it is

New York Stock Exchange Safe Deposit Vault.
about 15 lamps these are supplied from
Cantt Station. Equitable Bldg #120 Broadway.

G. H. Davis & Co. 17 Wall st Bankers & Brokers
Eleven lamps, these are supplied from
Cantt Station Equitable Building.

Hatch & Foote 12 Wall st Bankers & Brokers
about 15 lamps - these are supplied from
Cantt Station Equitable Building.

This concern were the Bankers of the
Maxim U. S. F. L. Co. and may be at this
time -

Park Place Station Metropolitan E. L. R.R.
Have recently put in 6 incandescent lamps
for a trial - these are supplied from Cantt
Station located #206 & 208 Fulton street.

The Penn. R.R. C. have ferry boats
lighted with from 38 to 54 lights each
current supplied by dynamo engine on
each boat -

Caswell, Hazard & Co. Druggists Cor.
5th air & 24th st - Probably 30 or 40 lamps
they did not know how many they did have.

Current taken from Cull Station Con
6th air & 25th st.

Mr. Howard told me they liked the light
as a light, but could not control it
the delivery of the current was very irreg-
ular in two particulars 1st when they
wanted the light they did not always
have it and had to send word to the
station and 2nd the lamps frequently
flickered. and the turning off the lamps
did not diminish the light, as it made
the balance burn brighter, and without
constant care and thoughtfulness they
would burn off some of the wires, thus
they occasionally did. said it was
not reliable. they were compelled to de-
pend on gas, and should now wait
could be better controlled before intro-
ducing it again.

Theodore B. Starr Junior & Sternsmith
5th air. Took current
from Cull Station 6th air & 25th st. He
liked the light & to him it had several
advantages. wanted to know how soon
we would be up there with the light.
The Marx Co could not comply with
the requirements of the Fire Ins. Co.

who threatened to Cancel insurance policies if their requirements were not complied with. They were unable to do it & so the light was removed. The light has not been there for considerably more than a year -

Fisk & Hatch Bankers #5 Nassau St took current from Equitable Bldg. Mr Fisk said they were advised to use the incandescent light by Dr C. R. Agnew on account of the gas hurting the eyes - Mr Fisk said the Mexican people represented to them that putting in the conductors and fixtures would not mutilate the office, that the expense would not be very much - a few hundred dollars - and the cost of the light should be no more than gas.

The result he said was they damaged their office badly - they sent in a bill of about \$1500.00 for bringing & distributing the light (which however was not paid) and the bills first incurred were about 5 times greater than the gas bills for same number lights same length time in previous years.

Mr Fisk said they were perfectly willing to pay same as gas but the Maxim people said they could not furnish it at that price. So they themselves took the light out. Mr Fisk also said there was not the first element of business in the whole negotiation from beginning to end —

Metropolitan Hotel Broadway & Prices at
They said the incandescent light itself was all right, but the installation of lamps and conductors was exceedingly shabby disfiguring and defacing fixtures & ceiling & besides there was continually some trouble with the plant. The steam engineering part of the plant was also defective, the noisy exhaust of the engine disturbed the guests & they were compelled to abandon the light. This was an Isolated plant of 54 lamps - 9 chandeliers - 6 tiers —

St Nicholas Hotel Broadway N.Y.
An Isolated Plant —
When spoken to about installing an Edison Isolated Plant, they said they had tried the Maxim incandescents.

cent light to the extent of about 50
lights did not know exactly how
many - Said they took the house all
to pieces putting it in and the same
when it was taken out - Said it
cost more than gas to operate and
they could not see how the plant
would run for it self - Said the
light was beautiful but their ex-
perience with it unsatisfactory -
Said their gas bills were about
\$10,000.00 per annum -

Union Club 5th Ave + 21st St -
Took current from Cent Station for
6th Ave + 20th St - Said they wired
up for 32 lamps but never
used but 12 and these were in
the Card room - The light was dis-
continued a long time ago -

Yours Respectfully
B. H. Card

1883-05-23

Subject, _____ -: Maxim Incandescent :-

OFFICE OF THE
EDISON ELECTRIC LIGHT,
Nº 222 SANSOME ST.

GEN. S. LADD.

San Francisco, May 23 1883. *188*
In reply to yours 15 May.
Me

Thomas A. Edison, Esq.,
65 Fifth Avenue,
New York.

Dear Sir:-

I am positive there is not and never has been a Maxim incandescent lamp in this territory and I do not think there is one north or south of us west of the Rocky Mountains, unless it may be in Eastern Utah or Idaho, and I should have been likely to hear of it if such had been the fact.

Very truly Yours,

Geo. S. Ladd

THE METROPOLITAN OPERA HOUSE CO.,
OF NEW YORK (LIMITED),
BROADWAY AND 35th STREET.

RECEIVED

MAY 25 1883

ANSWERED

1883

FILE NO.

1883-05-24

My dear Sir: Your favor of May 19th and word
to Mr. Warren was read at the Directors
meeting yesterday and reported by them
to the Finance Committee.

To: Thomas H. Edison
Yours very truly,
Thomas H. Edison

2
THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

1873-05-24

NEW YORK MAY 24 1873

Mr. Moore,
I am obliged to
Mr. Edison by going to
see the engine referred
to in the enclosed.
I am,
Very truly,
Yours,
J. H. Small

I have
asked him
to send
me
the
engine

1883-05-25

EDISON COMPANY FOR ISOLATED LIGHTING

AGENCY FOR

MARYLAND, WESTERN PENNSYLVANIA & DISTRICT OF COLUMBIA,

No. 5 Hoen Building, Lexington Street,

Baltimore, May 25 - 1883

Mr. Thos. A. Edison

MAY 25 1883
ANSWERED

Dear Sir:

May 25 1883

I leave for Washington today and will report Monday on the subject of inquiry contained in your favor of the 16th inst.

I can say generally I do not know of any Maxton lamps ever burning in any

territory.

Very respectfully yours
Henry A. Clark.

1883-05-26

Form A 2

OFFICE OF THE AGENCY

THE EDISON COMPANY FOR ISOLATED LIGHTING,

No. 6 LEDGER BUILDING,

JOHN HOSKIN

agent for the
States of Pennsylvania, New Jersey,
and Delaware.

RECEIVED

MAY 29 1883

ANSWERED

Philadelphia, May 26 1883

Thomas A. Edison Esq.
New York

May 21 8 1883

FILE No.

Forward,

Have your favor of 18th respecting J & J
Robeson's mill, when I receive the new list of dynamos which Mr
Moore has promised to send me. I will make a fresh estimate.

I do not expect however to sell them a plant, because at this
cost is low for each lamp for annum, as supplied by their own works.

Therefore when they estimate the cost of operating an electric plant,
& then add to this the interest of their present "Low gas" plant, which
would then be useless, they think they are not going to be gamers by the
change, as they assert they have sufficiently good light which they
can burn freely, even to waste -

2nd - They light their
own houses & those of others, their stables &c - & say that with gas in the
holder they have light at any fall house, but with Electro they
only have light when the engine is running, & it stops @ 8 P.M.

Their books last year showed 2807 jets in use, costing for
coal, oil, & wages \$3501²⁶ or \$1⁴⁴ for burner per an.

They expected to add greatly to this number last winter.

When I talked with them, they declined to consider any plan that
would necessitate running both Electro & Gas plants, & especially
if it entailed additional running expense, or additional interest.

I shall be glad to get from you any suggestion which will help
me bridge over their difficulties, & ours

Yours Very Respectfully
John Hoskin ag

THOMAS A. EDISON
155 N. 4TH AVENUE

1883-05-26

NEW YORK

26th May 83

Calvin Goddard
care Daniel Hayes
Paris

Private. would you return
take Presidency Revolted with
absolute control. Complete
separation from Parent and
when

Edison

Blank No. 2

No. 1

CABLE MESSAGE.

1883-05-28

THE WESTERN UNION TELEGRAPH COMPANY.

ALL CABLE MESSAGES received for transmission must be written on the Message Blank provided by the Company for that purpose, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

A. R. BREWER, Secretary.

MORVIN GREEN, President.

Check.

14 Karlsruhe

Edison, N.Y.

65 Fifth Ave

191 BROADWAY.

Received at

May 28 1883

If all interests desire should
be favorably disposed, I write
fully
Goddard

1883-05-27

RECEIVED
MAY 29 1883
A.N. of RED

EDISON LIGHT COMPANIES.

Office of JOHN R. MARKLE & CO.,

Sole Agents for State of Michigan.

P. O. Address, 374 Cass Avenue.

.....*Edison L. 188.3*.....
FILE No.....

Recd. May 27th 1883

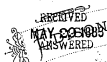
*Thos. A. Edison,
New York City,
Dear Sir*

*We will obtain all reliable
data possible, at an early day, touching
the Edison Light interests in this State
and forward same as per your request
of May 16th just recd.*

*Yours truly
John R. Markle & Co.*

*Keep us thoroughly posted as possible
on new developments and we shall
be much obliged. Sincerely*

1883-05-28



COMPANY FOR SOLATED LIGHTING

AGENCY FOR

MARYLAND, WESTERN PENNSYLVANIA & DISTRICT OF COLUMBIA,
FILE NO. 133

No. 5 Hoen Building, Lexington Street,
Washington, D.C.
Baltimore,

May 28th 1883.

Mr. Thos. A. Edison

Dear Sir:

In response to your communication of recent date I submit the following. The Baltimore "American" used the Maxim lamp about one year and a half ago, power supplied from engine in the building, light thrown out as unsatisfactory.

"The News" of Baltimore has a plant in now, though the lamps have not been going for two months, power from engine in the building. The reason of the present non-use is "the engine has to be used for other purposes."

"The Post" of Washington is fitted throughout with Maxim lamps, recently. Edison Electric Light Co. has headquarters in the Post building.

"The Republican" of Washington with offices in the

1883-05-28

EDISON COMPANY FOR ISOLATED LIGHTING

AGENCY FOR

MARYLAND, WESTERN PENNSYLVANIA & DISTRICT OF COLUMBIA,

No. 5 Goen Building, Lexington Street,

Baltimore, 188

Post building is run by the light of the Maxim lamp.

An attempt was made by the U.S. Co. to capture the Capital, it failed, though the lamps were used there, a small plant having been put in. I could not ascertain from what source the power came to run the lights in the Post and Republican buildings...

I do not know of any other places in my territory where the Maxim lamp is in use. The Maxim people prevented me from closing contract with Wm. E. Hooper & Sons for their "Meadow" mill at Winkberry, Md. This some months ago.

Friday the Brush-Swan storage people in Balto. prevented me from closing contract with Wm. Hooper for a plant for the "Herald" of that city.

I add by way of information which you may already possess, that Mr. Brush in his interview

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EDISON COMPANY FOR ISOLATED LIGHTING

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Baltimore, _____ 188

once here on "storage battery" application for patent has been defeated. His attorney then attempted to show that there was nothing new or patentable about it any way and cited three French authorities in support of his position, but was not sustained and a patent will be granted to his adversary tomorrow. This information I received confidentially and impart it in the same way for what it may be worth to you.

Very respectfully yours
Henry A. Clark.

1883-06-05

Chas. Mc & Co. Inc.
Cincinnati June 5th 1883

M. H. Moore Esq
Genl. Manager Edison Co.

Dear Sir

Your favor of the
25th ult. came duly to hand.

The proposition to supply Van Antwerp,
Bragg & Co. has been presented and taken
under consideration.

There are now only two
Maxim plants in use in buildings in
my Territory that I know of. One
with 3 lamps at Hall Safe & Lock Co.
Pearl & Almon Sts, the other with 2 lamps
at Art. J. Morris Printing Works 65 Ohio
St. both in Cincinnati.

The Steam boats
Will. S. Kays Capt. Wm. C. Dickson and the
Guiding Star Capt. J. D. Kogler running
between here & New Orleans, also have them.

The Maxim plant, 20 lamps, at the
Cincinnati Commercial Gazette, has
lately been taken out, as it was found
impossible to run it with their engine.

The Maxim plant at the Union
House, Cincinnati, with 72 lamps -
Completed Apr. 25th 1893, is in a crippled
condition, and they have had no electric
lights there since 4 P.M. May 24th at
which time the armature of the Weston
dynamo of this plant went to pieces,
throwing off the bars with great force,
long distances, tearing off wires, completely
stripping it, and otherwise injuring the
machine, the Engineer making a narrow
escape out of the room from the flying
pieces.

I have been making an effort
to induce Mr. Guinness, the owner of
the building to adopt the Edison, as it
is likely they would be in constant
fear of some other accident with another
Weston dynamo. He has gone to Chicago
and will be there all of this week, and
promised to call at the West-Edison Co.
office to see the lights.

Yours Respectfully
C. S. Ketchum

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for correction, and the company will not hold itself liable for errors or omissions in transmission or delivery of Universal Messages, beyond the amount of value paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an **UNRECEIVED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVING GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
2x9	CSA	39pl	

Received at **701 BROADWAY** **June 7 1889**Dated **Fall River Mass 7**To **I have a Edison 65 same ny****Think we do not need Mr Allen****we are working that field from Boston****I can do so without present increase****of force may need him later if so****well give him chance = Borden**

This telegram has just been received at the office in 701 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRES.

213.
June 7th / 83

Genl Borden

Re-Declining Service of
Mr. Clew

Memorandum made June 9th 1883, giving authentic information about Maxim Lights.

Baswell Hazard & Co, Drug Store, Fifth Avenue Hotel, New York. They had 20 lights taken from the Central Station, of 6th Ave. and 20th Street. Mr. Hazard stated that they could not control the delivery of the current. It is irregular; when they want the light they did not always have it and had to send round to the station. Lamps frequently flickered and the turning off of the lamps did not diminish the light, as it made the balance burn brighter and without constant care and thoughtfulness they would burn off some of the wires. This they occasionally did; - said it was not reliable. They were compelled to depend upon ops and should wait until it could be better controlled before introducing it again. Had it in a year, and then ordered it out. Did not pay anything during the year for it. Run as an advertisement for the light company.

Sheldon H. Stern, Jeweler and Silversmith, - There is no case because the Maxim Co. could not comply with the requirements of the Board of Fire Underwriters who threatened to cancel insurance policies if the requirements were not complied with. They were unable to do so and the light was removed.

Mr. Stern told our President that so many lamps were broken, the trouble of changing the lamps was a great nuisance, and that he could not endure it any longer. This light was supplied from the same central station as Baswell Hazard & Co.

Fiske and Hatch, 5 Nassau St., - Supplied from dynamo in the basement of the Equitable Building. Mr. Fiske said he was advised to use the light by Mr. Laguer on account of the gas hurting his eyes. Mr. Fiske said the Maxim people represented them that putting in the conductors and fixtures would not mutilate the office; that the expense would not be very much, a few hundred dollars. - and the cost of the light would be no more than gas.

The result was, he said, they damaged their office badly. They sent in a bill of \$4500. for bringing and distributing the light, which was not paid, and the bills first rendered were about five times greater than the gas bills for some length of time in previous years. Mr. Dickie said they were perfectly willing to pay same as gas but the Maxim people said they could not furnish it at that price, so they took the light out.

Mr. Dickie also said there was not the first element of business in the whole negotiation from beginning to end.

The Edison light has been supplied to Messrs Dickie and Hotel for some four months. They are well satisfied with the way we have done business with them. Reference may be made to Messrs Dickie & Hotel. - We have rendered them regular bills each month on a meter, and they have paid their bills, at sight, without complaint.

Metropolitan Hotel, Broadway and Chimes Street, N. Y.

Dumars stated that the installation of the Maxim lamps and conductors was exceedingly shabby, disfiguring and delaying fixtures and ceiling and besides, there was continually some trouble with the plant. - The steam engineering part of the plant was also defective. The noise of the engine disturbed the guests and they were compelled to abandon the light. There were 54 lamps, -

St. Nicholas Hotel, Broadway, N. Y.

When spoken to about installing on Edison plant they said they had tried the Maxim incandescent light to the extent of about 50 lights. said they tore the house all to pieces putting it in and the same when it was taken out. said it cost more than gas to operate. - They could not see how the plant could ever pay for itself. - Their experience was very unsatisfactory.

Union Club, 5th Avenue & 21st Street, N. Y.

Both current from central station, Est 16 1/2 Vol and 2500 ft. They wired up for 32 lamps, but never used but 12. - The light was discontinued a long time ago being unsatisfactory. One particular complaint was the explosion of the lamps, the small particles of glass from globes falling in every direction.

The Pennsylvania R. R. Co., have ferry boats lighted with 54 lights each. Current supplied by dynamo and engine on each boat, put in these boats by favoritism and friendship between managers, and put in at a large deduction from actual cost of plant for a Maxim advertisement. We refused to compete against them except at our regular figures and the Maxim people offered to take the job at any price, even for nothing. Lamps are run at very low candle power almost yellow for the sake of getting long life of lamps for advertising purposes.

Park Ave. Station Metropolitan Elevated R. R.

Have recently put in 6 incandescent lamps on trial, these lamps are still on trial.

Hatch and Boote, Bankers, 12 Wall St. N. Y.

Had about 20 lights in for several months and discontinued them because unsatisfactory, although they were the Bankers of the Maxim and United States Electric Light Co. - Mr. Hatch ordered the Edison light in from the Pearl Street station of the Maxim Co, hearing of the same, insisted they should take back the light they once refused, and Mr. Hatch thought they could not well refuse, he himself being a director of Banker for the Company.

J. H. Davis & Co, 17 Wall St. N. Y.

Edison lamps supplied from the basement of the Equitable Building. - Only lately put in. - No reports as to working.

New York Stock Exchange Vaults.

16 lamps, been in for several months. Stock Exchange people state that they are not satisfactory. We are lighting the great Board Room of the Exchange with 198 lamps. The working of our light has been satisfactory, and we expect to get an order to light the whole building, thus displacing the Maxim lamps although the Maxim people are using every possible personal and social influence to prevent it.

Safe Deposit Vaults, Equitable Building.

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Have about 10 lamps. The officers of this Company are the Directors in the United States Electric Lighting Co, and McHyde, the President of the Equitable Life Ins Co, and Safety Deposit Co, is one of the leading and active men in the United States Co,

There was a jewelry store on Sixth Avenue near 84th from which the Maxim incandescent lights were taken out after running three months. Reasons unknown. Would not state what they paid.

Union League Club

25 Maxim incandescent lamps. - Run for some time, and taken out because unsatisfactory.

Commercial Advertiser

Had about 25 Maxim incandescent lamps. - Ran for several months. Taken out because unsatisfactory. - Ours have been put in and are now running regularly. Refer as to whether satisfactory.

Several places in Washington Market wired up for Maxim incandescent lights several months ago, none have been put in.

Barber's Dining Room, Fulton St, N. Y.

About 50 Maxim incandescent lamps were put in. - Run for two months and then ordered out because went out so often. Unreliable and the lamps busted so often.

Hoffman House

Maxim plant put in on trial, ran for several months free. Proprietor now paying about half what their gas bills are for the same amount of light. - Run at a great loss, and as an advertisement of the light, not paid by Board of the United States

Western Union Telegraph Co

They had used a few Maxim lamps in one part of their building for several months, and after trial, they decided to take them out, and gave a written order to the Edison Co, to light the entire building from the Pearl St. Station. After the contract was signed by the General Manager of the Western Union, Mr Hyde, of the Equitable Life Ins Co, and a director

in the United States too, made a personal appeal to Gen' Berkert, who is himself a director in one or more of Mr. Hyde's Companies, to retain at least, a few of the Maxim lamps in order not to dis-
 grace the company. Gen' Berkert, although bound by our con-
 tract to have us light the entire building, felt obliged to gratify
 Mr. Hyde. He offered to have us light all the building except
 some portion to be left to the Maxim people to enable them to
 save their reputation. We declined to light any part of the
 building unless we could light the whole of it, and although
 we had a written contract, concluded to let them try the Maxim
 lamps by themselves, and we have not put any lights in the
 Western Union Building. Ultimately we believe the Maxim lamps
 will be ordered out.

City Sun of Co, Broadway,

Have 42 Maxim lights. These are run from a Maxim station
 over a wire, and although very irregular, are considered preferable
 to gas on account of the absence of heat.

Biggs Store, near Hall and Nassau Streets,

Have several Maxim lamps but they merely laugh at them and
 keep all their gas burning, for unknown reasons, some days the
 lamps are only red, others very brilliant.

The Safe Deposit Vaults, under the Bond Bank,

Have 20 Maxim lights. They are dissatisfied with them and have
 been negotiating with us to run our mains over and displace the
 Maxim lights with ours.

Post Office, New York City,

Between one and two hundred Maxim incandescent lamps, in addition
 to their arc lights, have been running there for several months. This
 plant is run by the employees of the Maxim company and we
 believe they are run free, but the Post Office people may get
 an appropriation ultimately and pay something for the incandescent
 lamps. We had a plant in there for several weeks, it worked
 satisfactory to all, but we found they were not liable to get the
 appropriation, and we immediately withdrew, as it is our rule
 not to supply lights for nothing either for advertising purposes.

or otherwise.

Edison Co., Edison Falls, Me. - Long Mills -

They first installed a Maxim isolated plant of about 200 lights and ran it an entire season. They were then dissatisfied, and took one of our plants to run in a different part of the mill, continuing the Maxim plant at the same time. After several months trial of both lights, they rejected the Maxim plant, which they had paid for, and bought an additional plant from us to take the place of the Maxim lamps. - We have the Maxim machines. -

About a year and a half ago a number of Maxim lights were introduced into the Palmer House, Chicago. They are not now used having been thrown out, because unsatisfactory. The Palmer House, now uses an Edison isolated plant with satisfaction. - We get paid for it at regular rates.

The First National Bank of Chicago.

Adopted the Maxim light in preference to ours on account of misrepresentations made, several months ago, but since that time they have become dissatisfied with the Maxim plant and thrown it out. - Have purchased an isolated plant from the Edison Co., to take the place of the Maxim lamps. The Maxim plant had not been paid for.

Some part of the hospital at Albany was lighted up with a hundred light machine Maxim lamps. We learn that there has been trouble with this installation, and have been informed that at times it does not run. - Will find out more about it. -

A year and a half ago a Maxim plant was sent out to Bay State Hotel, and put in a hotel. After running for a week something became deranged about the machine and all the lamps burst. Another set of lamps were set on, and in about two weeks after they again burst, and the whole thing was abandoned.

In that portion of New England west of Worcester and north of Hartford, there is but one installation of Maxim

— 7 —
 incandescent lamps. Two private trials were made with plants, but abandoned. Late last winter the New England Weston Co, installed a plant of one Weston dynamo and 40 Maxim lamps, with a regulator, in the Newton Paper Co, Mill at Holyoke. After a great deal of trouble, it got in operation and was kept running by the New England Co's men for nearly two months. During this time accidents were so very frequent that the Newton Co, became satisfied the plant would not work satisfactorily, so they declined to pay the bill and ordered the plant removed. The New England Weston Co, insists that the installation is a success and is now trying to collect the bill which the Newton Co, have no idea of paying. On the 5th of May a suit for \$10,000 was brought against the Holyoke concern by the New England Weston Co, and the Mill of the former attached for that amount. The Newtons are disinclined to any compromise, so it seems quite probable that the failure will be exposed in Court.

On Philadelphia our agent reports that there is a small Maxim installation at the United States Mint of 15 lights. Also at the Post Office, at Messrs John W. H. & Sons, and at Messrs Pierce & Co, Bristol Pa. There are no others in operation there. The lighting at the Mint has been very poor, but it is understood that political affiliations kept it in. — Will ascertain further about this plant.

Our agent at Louisville reports that there is no Maxim lamps in his territory except one on the steamer Mill & Hayes running on the Ohio. It consists of 108 lamps. The plant has not been giving satisfaction until the last voyage when they worked a little better. The Boat is owned in Pittsburgh and runs between Cincinnati and New Orleans. The local United States Co, at Louisville have a Maxim incandescent machine at their central station but have not used for it and are not running it at the latest advice. Whenever they can hear of our making an estimate they always try to get the contract by under estimating. We always decline to alter our figures, and

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upt, as a rule, we get the order on account of the acknowledged superiority of our plant and their records. —

In Milwaukee there is one installation only, consisting of 15 incandescent lamps. They are operated by the Maxum people.

At Jonesville, Wis, there is the Mc Sain Wooden Mill, who are using 57 lamps, just put in. The Jonesville Cotton Mill use 150 lights, just put in. —

In Chicago, Davidson & Sons, Marble Workers, use a 50 light Maxum plant. — Will obtain further accounts of these plant. — Conadner, Smith and Co, run 100 lights (Maxum). They do not run the full complement of lamps for which the machine is sold for as they have trouble if they attempt to do so. The light is not satisfactory. — Whenever we attempt to sell or organize, the United States Cos agents are on our heels immediately with all kinds of offers, but generally unsuccessfully.

At the Railway Exposition at Chicago has all the different Electric Lights on exhibition, including a large plant put in by the Maxum people. There are no other plants in Illinois, Iowa and Wisconsin, so far as we have been able to learn.

In the territory around Cincinnati there are several Maxum plants, There are three Maxum incandescent plants in Cincinnati, one of which, is of 200 lamps used by the Hall Self and Stark Co, and sold to them considerably under price and at a loss. — Another with 20 at the Cobb Morris Print Works 60th Vine Street, and the other with 12 lights at the Denison House owned by Mr Denison. — This one has not been accepted, and may not be. Since this report, we have received a letter from our agent saying that the machine at the Denison House burnt and very nearly killed the engineer. The Commercial Gazette, No, 4th and Race Streets had a plant of 20 lamps which proved unsatisfactory and was thrown out.

Our agent in California reports there is not a single Maxum incandescent plant west of the Rocky Mountains.

Our Baltimore agent reports that the following are

the only Maxim plants in his region. The "Baltimore American" used the Maxim lamp about one year and a half ago. The light was thrown out, being unsatisfactory. "The News of Baltimore" has a plant in now, though the lamps have not been going for two months. "The Post" of Washington is fitted throughout recently with Maxim lamps, Wilson Hutchins, editor and proprietor is a stockholder of the E. & F. Electric Light Co. of this City, which has head quarters in the Post Building.

"The Republican" of Washington, with offices in the Post Building, is run by the light of the Maxim lamp. - An attempt was made by the United States people to capture the Capital. It failed, though the lamps were used there, a small plant having been put in.

Rhode Island.

The Maxim people have a strong local company here with E. J. York, Superintendent at the head. He is himself owner and manager either in whole or in part of several corporations and he has had the light introduced into some of his Mills.

Arnold K. Chase of the Valley Falls Co. has 230 lights we tried to sell a plant to this party but he told us the Maxim people had underbid our prices. - Grant Knott, Olneyville, R. I. bought a Maxim plant because we would not contract to install our plant within a given period, which did not give us sufficient time to do it properly. The Maxim people agreed to do it and to start on the day named Jan 1st. The order was given to the Maxim people. The first of February came and the Mill was not wired, but we believe the Mill has since been lighted. - The manager stated that he knew the Edison Company had many skilled scientific and practical men in their employ but he did not meet one in the Maxim Co. He has two machines but they are not paid for, and will not be until a test is made, which, if the test is properly made, will prove fatal to the Maxim guarantee. The only other plants in Rhode Island are in

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mills controlled by Jno. Lippitt, and we have not been able to get any information about these plants, as they decline to furnish any. We just learn that in the City of Providence the local arc light company runs a 40 light Maxim machine for incandescent lamps, and have a few lamps which are being rented out at 10 cents per night. Jno. Lippitt's Mills so far as we can learn, are the "Fiske Mills", the "New Nourse Mill" and the "Wonschoet Mills" of Wonschoet, R. I.

Lowell Mass.

Our report is dated May 25th and is as follows:-
The Lowell Manufacturing Co, are using about 500 Maxim lights. We are informed that the managers of this Mill are interested in the local Maxim Co, either at Lowell or Boston. The Merrimack Mills have used a Maxim plant for over a year, and have also for the most of that period used an Edison plant which they have paid for, and ordered their plant increased, also paying for the increase, but we believe they still burn some of the Maxim lamps. - The local arc light company are ordering in a Maxim incandescent machine, and say they are going to try to sell Maxim lamps over wires, the same as arc lights. - The following is a list of people thus using the light over wires:- Building belonging to the estate of Jonathan Sykes, one or two lights in a building belonging to the estate of W. D. Childrich, - A few lamps in the Prescott National Bank, also, some in the Wooden and Grocery store of Charles H. Cheney.

Boston Mass.

The Brunswick Hotel, has about 20 lights in their billiard room run from the arc light station over a wire at some distance away, and the loss upon the wiring between the station and the hotel, is known to be more than 50 percent.

There are 10 Maxim incandescent lights in the company room of the Boston Herald, and about 50 elsewhere. The principal lighting is done by an Edison plant of 250 lights.

These Maxim lights are not satisfactory, are only put

in on trial, and Mr. Pillsbury has asked us to bid for lighting the entire building. The Park Theatre in Boston have offered us a contract to install an isolated plant but they wish us to deduct something from our price, which we are unwilling to do. The Maxim people have offered to light the theatre for nothing, and we may possibly withdraw and let them do it, unless we can get our full price. Since above report we have the Maxim Co. have withdrawn their offer. - The Maxim people made estimates to light the Hotel Brunswick, but the job was a larger one than they could practically handle and the matter has been dropped, certainly for the present.

A strong Weston company was formed in Boston under the protection of a banking firm, Messrs Lee, Higginson & Co. This firm had their banking office lighted with Maxim lamps, but after a short time they turned them out and discontinued their use permanently. - Strong influences have been used to induce them to start the lamps again in order not to disgrace the company, and it may be done. - The New York branch of this same banking firm use the Edison lamps from the Canal street station, have been doing so for several months and pay their bills regularly.

The report that the Maxim incandescent lamps are in use on the Brooklyn Bridge is false. The United States Co. do not use Maxim lamps but use the Weston arc lights. A correct account has been kept of the number of lamps, of which there are 80. - Some of them have given out every night since the bridge was opened.

Record of single lights.

May 30 th	60	individual lamps went out, - 93 went down to less than 1/2 light
" 31 st	42,	" " " " " " " " " " " "
June, 1 st	52,	" " " " " " " " " " " "
" 4 th	51,	" " " " " " " " " " " "
" 5 th	41,	" " " " " " " " " " " "

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While on this subject of arc lamps, the report of the City Gas Inspector, on arc lamps furnished by the United States Electric Lighting Co, in New York City, may be of interest.

The Report, dated June 11th, is as follows:-

Services to the City of New York, by the United States Illuminating Co, for 75 arc lights distributed in Battery Park, Broadway, City Hall Park, Washington Square and Fifth Avenue. Charges are 70¢ per night, per light for service. Deductions are 70¢ per one partial extinguishment and \$1.40 for each all extinguishment.

During the month of -	Total	All		Bill	Deduction
	Lamp nights	Extinguishment	Partial Extinguishment		
July 1882	1726.		23	1208.20	19.00
August "	2260.		70	1584.10	49.00
September "	2190.	8.	151.	1533.00	116.00
October "	2260.	9.	59	1584.10	53.90
November "	2190.	6.	119.	1533.00	91.70
December "	2260.	16.	126.	1584.10	110.00
January 1883	2260.	8.	59.	1584.10	45.00
February "	2044.	4.	39.	1420.00	30.90
March "	2260.	8	64.	1584.10	43.40
Total for 9 months	19465		759	16025.00	563.00
		32 per cent			4.12 per cent of bill
		Extinguishment per lamp night			

We do not intend to equal of arc lights, but only mention it in this connection in order to correct a misstatement made throughout the country, as they have used the lighting of the Bridge very extensively as an advertisement, everywhere except New York City. We will add that the Mining of the Brooklyn Bridge is absolutely worthless and the entire job is to be done over again.

The following is from the New York Sun of June 11th

The electric lights alternately blazed forth and again flutered and grew dim. Now and then a lamp would go nearly out and the carbons would give a misty yellow glow. Then they would sputter and crackle. Again the yellow light would grow white and the lamp would shine out with its former brilliancy.

South Carolina

There is a local company now using the Weston arc light and the Maxim lamps in Charleston. They are running some Maxim lamps in series, along with the arc lights.

These lamps are now under trial, but, so far as we can learn, are not yet paid for by the users, and are not satisfactory, as they have difficulty in running them in this manner.

Canada

A local company was formed in Canada to exploit the Maxim lamp. The plant was installed in a railway station also in the Bank of Montreal, and possibly in one or two other places. The plants gave such little satisfaction that the business did not look attractive to the local Canadian Company. And we understand that said company defaulted in making their payments for patent rights for Canada. The Maxim light in Canada is practically dead. We should add that some lamps were burning in the St. Lawrence Hotel in Montreal, and that, from the present observation of at least half a dozen of our own people, they were a disgrace to the Maxim Company.

In Europe the Maxim lamp is a complete failure. In France, where we have brought a suit for infringement against Maxim, when the suit came up for trial it was obliged to be laid over because there was not a single Maxim lamp to be found in France, working. Under French law, as we understand it, they will not enter up what they call an empty judgment, that is, one against a thing not in existence, and our suit cannot go on until some Maxim

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Lamps can be found somewhere in France in use. Elsewhere on the Continent there are no Maxim lamps in use, so far as we can learn. In England there are a few small plants, which ^{we} estimate to aggregate say 200 Maxim incandescent lamps but we have no detailed report of them. The English Maxim Co., is about to liquidate, unless more funds are furnished by the stockholders.

Our Agents will understand that the amount of copper wire required in making an installation depends entirely upon the resistance of the lamps. The lower the resistance the greater the amount of copper. The resistance of the Maxim lamp is about 40 ohms against 18.5 ohms for the Edison lamp. Consequently if the same amount of current is to be lost upon the mains in both cases the Maxim lamp will require three and one fifth times as much copper to be used as with the Edison lamp but if they use the same amount of copper the loss to the Maxim lamps will be three and one half times which is, of course, fatal in economy viewed from a commercial standpoint. In no case have the Maxim lamps shown in tests a greater economy than from one half to two thirds that of the Edison. This again requires a further increase in the amount of copper which for the same candle power is about 8 times as much copper.

Ohio.

There is a Maxim plant at Mount Vernon which we have no information about, but have written.

Regarding the plant in the Metropolitan Hotel our Agent reports June 11th as follows:

"There are no Maxim incandescent lamps in use at the Metropolitan Hotel (Broadway and Prince St.), their use having been discontinued on or about the first of March last and the electrical attachments to the gas fixtures removed. The plant, which was an isolated one, consisted of a dynamo and 68 lamps attached to 9 gas chandeliers distributed in and about the office. The motive power was supplied by a 8" x 10" stroke

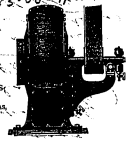
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1883-06-11

B. F. STURTEVANT.

PATENTEE AND SOLE MANUFACTURER OF THE

STURTEVANT BLOWER, & EXHAUST FAN.



FOR CUPOLA FURNACES, FORGES, STEAM BOILERS, HEATING FURNACES, DRYING WOOL, COTTON, ETC., AND FOR PURPOSES OF VENTILATION.

FOR CARRYING OFF SHAVINGS, AND SAWDUST, DUST FROM SAND AND EMBERY WHEELS, REMOVING GAS SMOKE AND ALL NOXIOUS FUMES.

SALESROOM, 156, 158, 160 and 162 OLIVER, COR. PURCHASE ST.

Office and Factory at Jamaica Plain Station, 'on B. & P. R. R., Ward 23, Boston, Mass.

Confidential

NEW YORK OFFICE, 118. LIBERTY STREET.

All Correspondence should be with the Home Office at Boston.

New York June 11th 1883.

J. A. Edison Esq.,
65 Truitt Ave. N.Y.
City Dear Friend

Referring to our late conversation I beg to say that I am a good deal disappointed at the loss of New Hampshire as I had supposed the matter to be settled, and had made my arrangements accordingly. As part of my plan I indicated to you viz. that my bro-in-law the Hon W. A. Spooner of Boston had many friends in that State, and I had written him asking that he give me letters of recommendation, which would certainly further my object. Many of these people I knew well. You will understand that every man in N.H. is a politician, while we were at the Custom House in Mass. regular rendezvous for conference in regard to the elections in that close State. I proposed to work them for all they were worth. At Mr. Tilton of Tilton N.H. had an office

in this building and I had determined to
make Tilton my first objective point.
Mr. T. is a millionaire & a philanthro-
pist who has lately given to the town an
Town Hall & an Opera House & for others
in every thing worth having. I had deter-
mined if possible to place my first plant
there, altho' it would necessarily have
been a small one as it was I could
town.

Further, I have my intention to make
investments in towns where it was found
hard to fill up the required amt. My
father has lately taken 85% on the 1st and
a deposit of \$20000 which awaits invest-
ment, and besides this I have three com-
pans who have lately invested \$100000 each
which is largely invested in Govt & bottom
mortgages - all paying a low rate of int. &
& it only needs to assure them of a legit-
imate investment which would pay them
better, to cause a handsome investment of
their capitals; and to assure this, the fact
remains that a ~~company~~ ^{company} of my father
Mr. Theo. Dean of Newton is a ~~case~~
director of your Boston Co. & presumably
a large stockholder. ~~I should~~
~~considered a~~ ~~kind of~~ ~~trustee~~ ~~of~~ ~~the~~ ~~company~~
one family. You now have an outline
of my plan. I have no intention to place
my apartment. Yours truly, W. H. Allen

We depend entirely on the power of
 The Edison Electric Light System.

SOME MILL
 THOMAS SWINYARD.

CANADA LIFE CHAMBERS

some mill work done on lamp pattern
 & date when taken out, the time of day

HAMILTON, ONT.

June 12 1883

Mr. J. A. Edison

#65- Fifth Ave

Per 6 times a day
 as to the number of lamps under order

Dfpi, Lamps say to 14

In guaranteeing our lamps
 at 100 hours, most mills have
 stipulation as to the number of lamps
 their lamps are normal. These
 brilliancy is necessary to make
 As an example to Manager
 of a large Woolen Mill at
 Cornwall who is thinking of
 putting in our light worth
 me a few days since asking
 what variation in driving
 power could be allowed
 with our guarantee. Implied
 that if an attendant at once
 operated the resistance box
 as soon as the pressure
 indicator announced the lamps
 to be above their normal C.P.
 we could allow a jump of

1873-06-12

The Edison Electric Light System.

CANADA LIFE CHAMBERS,

THOMAS SWINYARD.

HAMILTON, ONT., ... 18

on dynamo.
40 revolutions, providing this
sudden change did not come
often than six times per day.
I should like to have your
views on this subject as in
Canada this is a question more
frequently asked than in the State.
Also in case of dispute as
to life of lamps what means
of arriving at the facts regarding
C.P. and life would you
suggest.

Has anything been done towards
testing the Steam Engine Regulation.
I am anxious to have it tried
as I am pretty sure it will
work satisfactorily. In consequence
of Mr. Swinards illness things
there are at a lull in the
formation of Company.
Yours Truly
H. M. B. Kelly

(883)-06-13.

June 13th.

Spencer Gordon, Esq.

P. O. Box 2511,

Boston, Mass.

Dear Sir:-

I am in receipt of your favor of the 12th inst.

I telegraphed with reference to Mr. Allen, because I thought he would be a very good man for you to use and not because I simply wanted to get a telegram from you saying that you did not want him. You told me sometime ago that we could appoint agents for central station work from here, and I have been looking for good men on that assumption. You seem to have changed your views however since then.

Very truly yours,



Edison Electric Light Company
AND
Edison Company for Isolated Lighting.

1883-06-12
Box 3311, Boston, Mass.

Spencer Borden, Manager
New England Department.
Herald Building.

Boston, June 12th, 1883

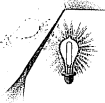
Thomas A. Edison, Esq.

Dear Sir:

Your favor June 11th duly received. The reasons for my answering as I did in the case of Mr Allen about whom you telegraphed were, (1st) I made up my mind he was in New York asking for something to do, and you wanted such an answer as you got from me, and (2nd) that I don't think we need an additional man to take village plant business.

Hodgkinson, Bancroft, Vaine, Lickney and myself are pushing this all it can be pushed, and until a few of the stations are running that you now have on hand, it is little use to try to bring others in, though I go to Yonkers and New London to-morrow, and Bancroft and Lickney to Pittsfield.

We really do not need any more executive force at present, and when we do I think the correct policy to give those who have already shown



Edison Electric Light Company
AND
Edison Company for Isolated Lighting.

1583-06-12
Box 3311, Boston, Mass.

Spencer Bodden, Manager
New England Department.
Fernald Building.

Boston, 2^d 1888

ability and industry in minor places, the opportunity, rather than to give all the good things to New men. I have one or two men in the Department who are capable of doing more responsible work than now occupies them, and I think it very fair to let them leave the places as they develop.

I made no mistake in giving Dr. W. L. a bigger range than office work, I should make room to give similar chances to Rice, A. T. Moore, or one or two others.

Yesterday I met Ludlam* at the Parker House. Will you kindly send him, by mail, one of the Green Van Nostrand books on incandescent lighting containing Howells' tests of dynamos at Stevens' Institute and oblige

*Address J. J. Ludlam,
Lowell,
Mass.

Yours very truly
Spencer Bodden, Manager.
New England Dept.

1883-06-23

Form A 2

OFFICE OF THE AGENCY

THE EDISON COMPANY FOR ISOLATED LIGHTING,

No. 6 LEDGER BUILDING,

Black and Chestnut Sts.

JOHN HOSKIN

Agent for the

States of Pennsylvania, New Jersey,
and Delaware.

Thomas A. Edison Esq.
New York, N.Y.

Philadelphia, Pa. 23 1883

10 A lamps & reflectors better than an

Here is wanted here

1st a lamp for service on ship-board, to light up the beach, & serve for boat service when landing in the surf.

The ship needing this - in the Sandwich Islands - wants one such lamp - but I have induced the consideration of attiny incandescent lighting for the whole ship from the same circuit -

Can I recommend anything better than a Morse arc lamp with reflector for this use? How many incand. A lamps will the 1 arc light displace?

2 Also I have two or three customers who like their use of the arc light for general illumination in lofty shops - mixed with incandescent at the benches - What do you recommend for this lighting? Clusters of A lamps? 50% & 100%? or the "spiral" that Mr. Russell spoke of to me recently? My only chance -

3 get some of these jobs in to sell what they ask for - at least in part. Also for mast-head ship lights (white), & sailing lights, red & green, & good power for foggy weather, what do you recommend?

Awaiting your reply I am

Very respectfully

John Hoskin

fog obliterates all white light
in fog only the red & yellow
10 A lamps in cluster will do better than a
are if rightly arranged - we can give a best showing
outside lit by incand. cluster in special

use reflector

T. H. THALL, Agt for

1883-06-23

THE EDISON ELECTRIC LIGHT CO., Central New York.
65 FIFTH AVENUE

4 Union St, Syracuse

June 23rd 1883

Apch to H. J. P.
To Edison
65 Fifth Ave N.Y.
Dear Sir

Pardon my writing to you regarding this field, but
there seems no other way for me to do. On the 13th I wrote Mr. Eaton
asking the loan of Dynamometer in freight from at Utica. It was referred to
Mr. Hastings he wrote on the 16th. In regard to Dynamometer at Utica freight house
we are unable to state at the moment whether we can send it to I. or not.
If it is not to be used in Utica we would probably be able to loan it to
you in I. provided you have proper power to operate it. We are to pay for boring
fixtures countershaft &c. I replied that I had Porter S. H. P. engine
with shafting all ready that had sufficient power last winter for Fuller
light power very steady. The Org of Plow Works desire to become interested
in local & I propose to furnish power without cost with others say
that if light work all right they guarantee an organization within a
few days. Utica has one Machine. I do not see why Mr. Benton
should be so much more favored. I have agreed that if
after exhibit is made or is not formed to stand all expenses
I pay for use of Machine The home & therefore runs parish

THOMAS A. EDISON,
365 FIFTH AVENUE,
NEW YORK.

I have good reason to believe that I can sell at least two isolated machines through the exhibit. I wrote ^{any before} again yesterday at the request of the gentlemen with whom I have negotiated asking Mr Hastings to telegraph me at my expense not one word have I heard. The parties say unless something is done soon they will have nothing to do with the project. I write this feeling the importance of the matter & wishing you to know how matter stands believing you can bring the matter about without Mr Hastings having to know I wrote you for it might anger him towards me as he says business must come to him. I feel he is somewhat opposed to my success as he took me in first place then was assisting for me & then you secured it for me. Is it so much more important a field that I should have two machines for exhibit while we can not obtain one. Again I excuse myself for intruding on your time.

Respectfully &
T. A. Teall

P.S. To day (4) after the following "I have not telegraphed you in reply to your favor of the 24th, assuming that you have read my letter answering your inquiry. As soon as we ^{have} decided in regard to Dynamat - I will notify you. I have heard nothing since the 18th

1883-06-27

I will write private note to Clark that if we can make the good racket we can pay up a private agreement to the proper party.

The Edison Company for Isolated Lighting.

AGENCY FOR

Maryland, Western Pennsylvania and District of Columbia,

No. 6 Room Building, Lexington Street.

Baltimore, June 27 1883.

Mr. Thos. A. Edison

Dear Sir,

Your letter in a letter in light this moment received. I was intending to take the train this A. M. and meander to Washington slowly. I will now hasten somewhat. Swager told me that if your light could do one-half what those who had isolated plants said it would it would abundantly satisfy the Gov. He spoke to me about my proposition for the Bureau of Printing & Engraving in such a way that I felt sure he would report favorably. I will call the friend whom you met to Washington and we will see to this matter. All that my friend asks for services now is his "travelling expenses", if successful a fair compensation. Please notify me here by wire

1883-C6-27

The Edison Company for Isolated Lighting.

AGENCY FOR

Maryland, Western Pennsylvania and District of Columbia,

No. 8 Hoar Building, Lexington Street.

~~Baltimore~~, Erie

1883.

to go ahead on that basis if you so desire.

A successful way of introducing the light into "Public Buildings" would be to put in the experimental plant into the Capitol. I obtained the consent of Architect Clark to do this. Only a small plant a 3 dynamos plenty large enough. Direct here and telegrams or letters will reach me quickest.

Mr. Dyer leaves this A.M. for Reno. Mr. Selden will be in N.Y. the last of this or first of next week and will probably call upon you. If I change my mind and conclude to start direct for N.Y. I will wire you. I think I will ask my friend, Mr. Richards, to call upon you before he goes to N.Y.

Very truly yours,
Henry A. Clark

1883-06-30

The Edison Company for Isolated Lighting.

AGENCY FOR

Maryland, Western Pennsylvania and District of Columbia,

No. 9 Hoan Building, Lexington Street.

Baltimore, Md. June 30th 1883.

Mr. Thos. A. Edison

Dear Sir:—

I will go over to
Washington Monday and remain there a
day or two and advise you of results.

Should
that Albertine or Edysville estimate be sent
me here at once? I am anxious to get it
at this particular time.

Very truly yours,
Henry A. Clarke.

10,000
200,000

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted by the sender of the following message.
 Messages can be sent for payment only by sending a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission.
 Messages are not delivered if the amount of fee paid therefor, in any case where the claim is not presented in writing within sixty days after sending the message.
 This is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions stated above.

NORVIN GILMAN, President.

THOS. T. ECKERT, General Manager.

NUMBER	SENT BY	RECD BY	CHECK
457	X	V	120.
Received at 750 BROADWAY			
852 BROADWAY			
July 2 1883			
Dated Boston			
To A. Edison			
Sixty four 7 p.m.			
Will come to New York first			
of next week			
Borden			

This telegram has just been received at the office in 701 BROADWAY, near Tenth Street, where any reply should be sent.
 DIRECT WIRES.



Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

1883-07-02

Box 3311, Boston, Mass.

Springer Garden, Manager
New England Department.
Herald Building.

Boston. July 2, 1883.

Thos. A. Edison, Esq.
Dear Sir:

Your various favors at hand, also telegram this morning. As this will be a broken week, on acct. of the 4th, I answered that I would be in New York the first of next week.

Your letter from the Babcock & Wilcox people has had my attention. I have seen Mr Wood, Manager of the Fair, and he talks well enough. I have also seen Huston of the B. & W. Co., and while I don't want to do anyone injustice, have kind of a feeling, that the B. & W. people are trying to force either the Fair or ourselves to buy their boiler. I think, however, I shall be able to arrange the matter satisfactorily, as ^{each} ~~both~~ parties asked me to see the other.

That you may fully protect your interests in all parts of the Country, I send you herewith a newspaper cutting that may be of interest.

One of the best friends we have anywhere, is Mr. E. J. Tobey, Vice-master of Boston. He never loses an opportunity to speak good

Copy of letter
from Spencer Rodden, Manager
Edison Company for Isolated Lighting.

Edison Company for Isolated Lighting.

Spencer Rodden, Manager
New England Department.
Herald Building.

Boston, Dec. 1888

Photo
word for us, and has repeatedly written the Secy. of
the Treasury asking for one light for the Boston
office. He has a son about 23 yrs. old that he
wants to have learn our business, and asked
me if I would write and ask you if you could
let him go to work in the Machine Works, so
as to get the practical knowledge he desires.
He would not expect more compensation than
just enough to pay his board.

I note your remarks in your favor of 28th
about Bancroft telling Mr. Adams people they
could put in 5000 ten candle lamps for \$30000.
I don't believe he ever told them such an im-
probable story. Bancroft is a careful and intelligent
man, and has all the estimates yet made for
other places, so I do not believe he would do
so foolish a thing. I will send your letter to
him and write you his answer.

Now are the parties in Mr. Adams you are
communicating with? We ought to work under-
standingly together, to prevent confusion.

Yours very truly Spencer Rodden Mgr.
N.E. Dept.

Let Spencer write
let him hear



Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

1883-07-06

Box 331, Boston, Mass.

Spencer Baden, Manager
New England Department.
Herald Building.

Boston, July 6th 1883

Mr. Thos. A. Edison

65 Fifth Avenue

New York City

Dear Sir: Will you kindly post me in regard
to the facts connected with the second test
of incandescent lamps made at Paris by
M. Tuzot. I understand that such a test
was made in behalf of the Maxim Co. who
were dissatisfied with the result of the first
test, and that this second test but corrobor-
ated those results. I wish, however, more
definite and detailed information

Very Truly Yours

Edison

ask Speers of Van Nos if he
knows where this can be
found write Batch for it
& tell P what you have
done — E



Edison Electric Light Company

1883-07-10

Box 331, Boston, Mass.

Edison Company for Isolated Lighting.

Frederic Borden, Manager

New England Department.

Herald Building.

Boston July 10th 1883

Thos. V. Edison Esq.

Dear Sir,

Enclosed

Please find a photograph of Mrs. Loby.
I hope you will be pleased with this
head.

Yours Truly,

Chas. D. McKinney.

THE EDISON COMPANY }
FOR ISOLATED LIGHTING.

GENERAL MANAGER'S OFFICE,
65 FIFTH AVENUE.

D
1883
Ee. 54.

Please address reply to the undersigned.

New York, July 12th 1883

I told Mr. Hastings that if the
New null makes an order
for the machine, we could
for the 100 light dynamo which the
Atlantic City people refused to
I beg to say that the dynamo was
ordered on the strength of our Phil. agent
having been given Mr. Edison's verbal
promise that it would be delivered. Would
it not be well to suggest to Mr. Edison
the propriety of having our agents confine
their negotiations touching our business,
to the general managers office. Our agents
do not make installations of very great
magnitude, and require no assistance be-
yond what is obtainable in Mr. Moore's
office, and to call in Mr. Edison in doing their
business only serves to complicate matters
and to further alienate men who already but ill
comprehend the relation between themselves
and the general office. J. S. Hutchinson

Form No. 1.

1883-07-13

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on condition limiting its liability, which have been accepted by the sender of the following messages.
 Every person who sends a message by this company, and the company will not hold itself liable for errors or delays in transmission or delivery of messages, or for the amount of bills paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.
 THE COMPANY TRANSMITS MESSAGES and is delivered by request of the sender, under the conditions stated above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
156	Cm	Spa New	1126
Received at 852 BRD. W. A.			
791 BROADWAY.			
Dated Boston Mass 13			
To J A Edison 65-5 av			
Will be there Monday next			
Sorden			

This telegram has just been received at the office in 791 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRES.

THE EDISON COMPANY
FOR ISOLATED LIGHTING.

1883-57-25
GENERAL MANAGERS OFFICE

111 WALL STREET
NEW YORK
OR FIFTH AVENUE

Please address reply
to the undersigned.

New York July 16th 1883

Mr. Edison

The Colorado people are
anxious to have the
Grand Canyon estimate.
When will it be ready?
J. H.

1883-67-17
Box 3311, Boston, Mass.



Edison Electric Light Company
AND
Edison Company for Isolated Lighting.

Spencer Bodden, Manager
New England Department.
Herald Building.

Boston, July 17th 1883

Mr. Samuel Inull.

Dear Sir:- Referring to the criticism of the friction clutch used at the Old Kentucky Horse Mills, I would say that four of these same clutches have been in use for four months, at the Horumbo Mauff & at Leeton Falls, Mo. and have given perfect satisfaction. It would obviously be impossible to start any piece of revolving mechanism, weighing as much as the armature, at a full speed of 900 or 1100 revolutions ^{as ~~an~~ criticism}. There must of necessity be a slip. The Horumbo people are not obliged to stop their mill or even slacken speed, neither would it be necessary, in the case in hand, were it not for the miserable support which they have for their countershafting. Their mill is framed like a house with 10' x 2" timbers placed one foot apart. On the bottom of these, they bolted the stringers, to support the hangers. Innet of necessity have been ignorant of this unusual construction of their mill, until I had seen it.

Very Resp. Yours
Edwin R. Ramey.

P.S. Inull says that this mistaken construction of the building is entirely responsible for the "slipping". S.B.B.

1283-07-17

EDISON ELECTRIC LIGHT CO.

BOSTON, JULY 17TH., 1883.

SAMUEL INSULL, ESQ.

DEAR SIR:-

HEREWITH PLEASE FIND ENCLOSED MEMORANDUM OF CRITICISMS ON THE INSTALLATION OF A PLANT AT THE OLD KENTUCKY WOOLEN MILLS LOUISVILLE, KY.

ON REACHING BOSTON AND READING IT OVER, I FIND NEITHER NAME NOR DATE ON THE MEMORANDUM. I ASK THAT YOU WILL KINDLY HAVE THE MEMORANDUM DATED, AND SIGNED BY THE PERSON WHO MAKES THE CHARGE, AND RETURN SAME TO ME FOR OUR FILES. IN ITS PRESENT CONDITION IT APPEARS LIKE AN ANONYMOUS COMMUNICATION, AND AS SUCH COULD HAVE NO PLACE AMONG THE PAPERS OF THIS OFFICE. ALTHOUGH THAT IS ITS PRESENT CONDITION, I SUBMIT HEREWITH COMMENTS ON THE MEMORANDUM, BOTH THE FIRST PART, AND THE ENUMERATED SPECIFIC RECAPITULATION, AS FOLLOWS:

THERE BEING NO FACILITIES FOR DOING GOOD MACHINISTS WORK IN LOUISVILLE, L. RICHARDSON & CO. SENT MR. PAINE THE SPEED OF THEIR SHAFTING-OR ENGINE- AND ASKED HIM TO FIGURE THEIR COUNTERSHAFTING AND PULLEYS AND FIND SOME ONE TO DO THEIR WORK. THIS MR. PAINE DID AS AN ACCOMMODATION TO THEM,, ASSUMING NO RESPONSIBILITY THEREFOR, THE OLD KENTUCKY WOOLEN CO. DOING THEIR BUSINESS WITH MACHINISTS HERE, NONE OF IT GOING THROUGH OUR BOOKS. WHEN MR. PAINE GOT TO KENTUCKY HE FOUND THE SPEEDS WRONG, A MISTAKE HAVING BEEN MADE BY MESSRS. L. RICHARDSON & CO. IN THE SPEED THEY SENT HIM. THIS THEY CORRECTED LATER, BUT MR. PAINE OVERLOOKED THE PAPER WHICH WAS PLACED ON HIS DESK, AND THE PULLEYS WERE FIGURED AT THE ORIGINAL SPEED GIVEN HIM, 140 REV., WHEN 136 WAS THE TRUE

SPEED.

MESSRS. L. RICHARDSON COULD NOT WAIT FOR A NEW PULLEY TO BE MADE, AND MR. PAINE SUGGESTED A METHOD BY WHICH THEY COULD GET THEIR LIGHT IN TWO DAYS, INSTEAD OF THE TWO WEEKS WHICH THEY MUST HAVE WAITED FOR A NEW PULLEY. I MAKE THIS FULL EXPLANATION, THAT NO CHARGE OF DIS-INGENUOUSNESS CAN BE MADE TO HOLD, THOUGH IT MIGHT HAVE BEEN DISPOSED OF IN A LINE, BY SAYING THAT L. RICHARDSON & CO., FURNISHED THEIR OWN COUNTERSHAFTING AND BELT CONNECTIONS, AND WE TOLD THEM WHAT WE NEEDED FOR SPEED AND POWER, BEYOND WHICH WE ASSUMED NO RESPONSIBILITY.

THE CLUTCH BUSINESS IS AMONG THE NUMBERED CHARGES, AND WILL HAVE ATTENTION WHEN THEY ARE CONSIDERED.

THE ONLY OTHER ITEM NEEDING CONSIDERATION UNTIL WE REACH THE NUMBERED ITEMS, IS THE STATEMENT THAT MR. PAINE SENT LIVERMORE THREE DIFFERENT CONNECTIONS OF THE DYNAMO OF WHICH NONE OF THEM WERE ANY GOOD.

THIS IS UTTERLY UNTRUE. MR. PAINE HAVING NEVER SEEN AN "H" DYNAMO, SENT TO MR. ANDREWS FOR THE CONNECTIONS, AND MADE CAREFUL NOTE OF SAME IN HIS NOTE BOOK ON RECEIVING ANDREW'S ANSWER. BEING IN MONTREAL AT HIS SISTER'S WEDDING, HE WROTE LIVERMORE THE CONNECTIONS AS HE REMEMBERED THEM, HIS NOTE BOOK BEING IN BOSTON. ON RETURNING TO BOSTON HE COPIED THE CONNECTIONS DIRECTLY FROM THE NOTES GIVEN HIM BY ANDREWS, AND SENT THEM TO LIVERMORE, WITH A LETTER OF EXPLANATION THAT HE BELIEVED THE SECOND TO BE THE SAME AS HE HAD ALREADY SENT, BUT IF ANY DIFFERENCE EXISTED THE SECOND WAS TO BE FOLLOWED, AS IT WAS TAKEN FROM THE AUTHORITATIVE STATEMENT OF THE HEAD OF THE TESTING ROOM AT THE MACHINE WORKS. PAINE SAYS THAT IF THEY WERE INCORRECT, IT WAS THE FAULT OF INSTRUCTIONS TO HIM, HE SENT WHAT HE RECEIVED FROM MR. ANDREWS.

3.

WITHOUT ANY REFLECTION ON THE GENTLEMAN WHO FINALLY GOT LIGHT FROM THE MACHINE, I THINK MR. PAINE WILL RANK WITH HIM IN ANY COMPETITION WHERE KNOWLEDGE OF ELECTRICITY OR ANY PART OF THE EDISON LIGHTING SYSTEM IS INVOLVED, AND NEEDS NO INSTRUCTION FROM THE GENTLEMAN TO ENABLE HIM TO FIGURE COUNTERSHAFTING OR PULLEYS CORRECTLY, WHEN FURNISHED CORRECT DATA.

I NOW COME TO THE ITEMIZED AND NUMBERED MISTAKES CHARGED:

1ST. THE COUNTERSHAFTING WAS NOT ERRONEOUSLY CALCULATED, BUT CALCULATED FROM ERRONEOUS DATA, AND WE DISTINCTLY WROTE THEM IT WAS AN ACCOMMODATION ON OUR PART, WE MUST NOT BE HELD RESPONSIBLE.

2ND. THE NEW PULLEY ON THE 'K' DYNAMO (WHICH RAN ALL RIGHT, AND ON WHOSE ACTION THEY ORDERED AN 'H') WAS MADE NECESSARY BY THE MISTAKE ALREADY MADE IN THE PULLEYS ON COUNTERSHAFT, UNLESS MESSRS. L. RICHARDSON & CO., WERE WILLING TO SUBMIT TO A TWO WEEKS FURTHER DELAY, WHICH THEY WERE NOT WILLING TO SUBMIT TO.

3RD. THE CLUTCH WAS BOUGHT FROM OTHER PARTIES BY MESSRS. L. RICHARDSON & CO., AND WAS OF A KIND THAT HAS WORKED WELL IN OUR EXPERIENCE ELSEWHERE. IF THE INDIVIDUAL CLUTCH THEY HAVE IN, ACTS AS STATED, I SHOULD ADVISE THEM TO MAKE THE PARTIES CHANGE IT.

4TH. I RESPECTFULLY DIFFER FROM THE OPINION OF THIS ITEM. AN EXPERIENCE OF 13 YEARS WITH FRICTION CLUTCHES, MAKES MY RESPECT FOR THE OPINION THAT WOULD FAIL TO AVAIL ITSELF OF A CLUTCH FOR HEAVY BELTS, VERY SMALL. IT IS WELL KNOWN THAT HEAVY BELTS WHEN PUSHED FROM A LOOSE TO A FAST PULLEY, OR VICE VERSA, ARE SOON BURNED AND WORN ON THEIR EDGES. NO GOOD MECHANIC WILL FAIL TO AVAIL HIMSELF OF EVERY WELL TESTED MECHANICAL PRINCIPLE, AND AMONG THESE EXPERIENCE ENDORSES A PROPERLY CON-

1883-07-17

4TH.

STRUCTED FRICTION CLUTCH FOR HEAVY BELTS AND HIGH SPEEDS.

5TH. WE SENT NO MAN FROM BOSTON PAYING HIS EXPENSES TO LOUISVILLE AND BACK TO PUT UP COUNTERSHAFTING. L. RICHARDSON & CO. DID SO BECAUSE THERE WERE NO LOCAL MECHANICAL FACILITIES FOR DOING SUCH WORK.

6TH. IT IS NOT TRUE THAT WE SENT ANY MAN TO LOUISVILLE WHO HAD NEVER BEFORE DONE ANY EDISON WIRING, AND THE EXPENSES OF ALL OUR MEN WERE PAID BY L. RICHARDSON & CO.

7TH. I REGRET THAT THERE WAS DELAY IN GETTING PROPER CONNECTIONS FOR THE DYNAMO, AND FEEL VERY GRATEFUL TO MR. MOORE FOR HIS COURTESY IN VOLUNTEERING TO ASSIST MR. LIVERMORE. MR. FRANCIS' GIGANTIC TASK WAS TO INSPECT THE INSTALLATION AND REPORT ITS CONDITION, MAKING PERFECT ANY DEFECTS HE MIGHT FIND, THE SAME 'GIGANTIC TASK' HE PERFORMS FOR ALL INSTALLATIONS IN THE NEW ENGLAND DEPT.

8TH. IT IS BETTER TO HAVE A PROPER SIZED PULLEY THAN ONE WITH LAGGING. IF LAGGING IS USED, LEATHER IS BETTER THAN ANYTHING ELSE, AND MY EXPERIENCE HAS NOT SHOWN THAT LEATHER LAGGING MAKES BELTS SLIP IF THE LAGGING IS PROPERLY SECURED TO THE PULLEY. THE 'K' MACHINE WITH LAGGED PULLEY CAN VERY WELL.

FINALLY, IN LOOKING THE LIST OF CRITICISMS OVER, IF THEY ARE ALL THAT CAN BE BROUGHT, IN THE LIGHT OF MY ANSWERS, I THINK THE OLD KENTUCKY WOOLEN MILLS MUST BE A VERY GOOD JOB. I HOPE NOTHING HAS BEEN SAID TO L. RICHARDSON & CO., TO MAKE THEM DISSATISFIED WITH THE JOB, WE WANT NO REPETITION OF NONANTUM BUSINESS.

AS MR. EDISON READ THE MEMORANDUM, WILL YOU KINDLY SEE THAT HE READS THIS LETTER, AND OBLIGE,

YOURS VERY TRULY,

*James Hartley Mansgen
New England
Boston*

1883-07-20

Mr. Insull:

I have your favor of 19th inst. respecting the ques-
tion of joining the ~~W E M C A~~ B: The only possible objection
we can raise to this arrangement is that by uniting in the scheme
we bind ourselves by implication to patronize every institution
represented. We wrote Messrs. Babcock and Wilcox signifying our
objection from this standpoint. If in conversation with them you
fully understood that there is no such implied obliga-
tion, certainly can have no objection to entering into the ar-
rangement. When you have a chance to speak to them on this subject
bring this point up and let me know the result. Am very
obliged for the list furnished which I will have copied and
sent to you.

20th

J. Hutchinson



Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

1883-07-23
Box 3311, Boston, Mass.

Spencer Borden, Manager
New England Department.
Herald Building.

Boston, July 23, 1883.

Samuel Insull, Esq.

Dear Sir:

Your favor of 19th inst. I find on my return to the City this A.M.

I think if you will kindly look over my letter of 17th inst. you will see that no reflection is intended by the use of the word "anonymous" therein. I wish to file the memorandum as it should be filed, among the papers of this office. As regards our files it is an anonymous communication, and for that reason I asked proper signature and date to be placed on it, and the memorandum returned.

Many thanks for your expressions of pleasure at finding the criticisms understood.

Yours very truly

Spencer Borden, Manager.

New England Dept.

1883-07-23.

EDISON CO. FOR ISOLATED LIGHTING,

Room No. 8, Board of Trade Building,

Wm. HODGKINSON, Agent,
Rhode Island and Eastern Conn.

PROVIDENCE, R. I., July 23^d 1883.

Sam'l Insull Esq.

Dear Sir,

Your favor of 17th inst. to hand —
I have been away in Connecticut
for a week & have only just
received it. I will attend to the
Warwick Central Station lot,
& then the Providence map —
until then

Believe me to remain

yours obediently
Wm. Hodgkinson
Agt. R. I. & Eastern Conn.



Edison Electric Light Company
AND
Edison Company for Isolated Lighting.

1883-07-24
Box 3311, Boston, Mass.

Spencer Horden, Manager
New England Department.
Herald Building.

Boston July 24, 1883

Thomas A. Edison, Esq.
Dear Sir,

I had the pleasure of having such a short colloquy
at my own house in your friend Mr. O'Brien Miller
this morning. He will continue to contribute to the
pleasure and profit of his stay in Boston to the
best of his ability.

This morning I had you to send a message to
Helen. One of the two men who is to have the
organization of the Company in hand came in
this morning, and they have now lights already
shown for and the Company can be organized
inside of 24 hours after they can get their
warrants.

The part of Lawrence is also in the office.
He says their building is all ready, and he
hopes there may be no delay in the matter.
of your meeting and men, which he has not
promised to be there to-morrow July 25.

Yours very truly
Spencer Horden, Manager.
New England Dept.



Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

1883-07-24
Box 3311, Boston, Mass.

Spencer Boden, Manager
New England Department,
Herald Building.

Boston, July 24, 1883.

Samuel Insull, Esq.
Dear Sir:

Your letter explains a puzzle we have all been trying to fathom since morning. The blasted thing came first at about 8 o'clock this morning. I sent it down with it to the office to have it interpreted. They said it must be a cipher; but I told them that was not so, I had no cipher with anyone. I noticed the dispatch was posted on after my fully legible address and thought they had posted on some other fellow's cipher, and sent my message to him. I made them repeat it this afternoon and it came again almost the same. When the repetition came up it was posted in the same place, and I was inclined to think they were playing it on me by returning the first form. This they declared was not so and showed a difference. I send you both messages herewith. You will see neither one was exactly right.

Yours very truly
Spencer Boden.

The only Independent Paper
in the County.

1883
Subscription Price: \$2.50
Six Months in Advance

PUBLICATION OFFICE OF

THE RENOVO RECORD

ERIE AVE., NEAR PASSENGER DEPOT,
RENOVO, PA.

JOHN W. SHAFFER,
Editor and Prop'r.

Reno, Pa., July 2, 1883

Dear Samuel,
Please send
to the address of
J. W. Shaffer, Renovo, Pa.
a copy of the report
of the Mayan Light by
the parties who have
read also send me
1/2 doz copies nothing
special yet.
Please attend to mailing
this above at once
Very truly yours,
J. W. Shaffer

[INCOMPLETE. TO SAMUEL INSULL?]



Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

1893-07-28.
Box 3311, Boston, Mass.

Spencer Borden, Manager
New England Department.
Herald Building.

Boston, 3, 1893

North Brookfield, Westboro.

I am very sorry to hear about continued and repeated delays at Portland. I saw King (who is forwarding the Portland Co.) this morning, and he is naturally very impatient at the delay.

I will write Mr. Hill about his friend Mr. Elliott of Haverhill.

Yours very truly
Spencer Borden, Manager.
New England Dept.

South street, N.Y. 10014

August 10, 1964

Mr. J. Borden

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Boston, Mass
Date July 25/64
J. Borden
General letter
to Lawrence
Portland
Maine
New England
York

100

1873-05-01

OFFICE OF THE AGENCY

THE EDISON COMPANY FOR ISOLATED LIGHTING,
No. 6 LEDGER BUILDING,

Sixth and Chestnut Sts.

JOHN HOSKIN,
Agent for the
States of Pennsylvania, New Jersey
and Delaware.

Philadelphia, Aug. 1, 1883

Samuel Beall Esq

New York, my Dear Sir

Please return

up that 100 lamp Dynamo for this
market - The ship builders &
owner are very anxious to hurry
the work.

Please let me know how it
stands by return mail & oblige

Yours Truly

John Hoskin ag

Mr. Edison,
Regarding the debt of \$67,000 (that is the amount today)
of the Light Co. to the Isolated Co., you ask why not call up all
the assessments of the parent company. These assessments have
all been called up, and there are no more to be called.

You also ask why not call up the assessments on the
Isolated. Three good reasons occur to me why not.

(1) The Isolated company would then have to render a
dividend on a million of dollars. It now has to render a dividend
on \$750,000. We want to make the dividend as large as possible,
and therefore ought not to be burdened with earning a dividend on
money loaned to the Light Co.

(2) The amount of money heretofore collected from the
stockholders of the Isolated company (\$375,000) ought to be enough
to do the business, and I would be ashamed to call in any more,
considering the amount of business the Isolated company is now
doing.

(3) I do not think a director of the Isolated Co. can
either in conscience or in law justify himself for voting to call
in an assessment so long as the Light company and the Ill. Co.
owe over \$70,000 to the Isolated Co. and so long as the officers
of the Isolated Co. believe (as they do) that if these debts were
paid the Isolated Co. would have in its treasury all the money it
needs for its business this year.

Speaking for myself, I do not think I could justify a vote,
as a director of the Isolated Co., calling in additional assess-
ments, while the debt of the Light Co. to the Isolated Co. remains
unpaid.

S. B. Eaton

August 9th. 1893.

per Mc G.

1883-08-11

The Edison Company for Isolated Lighting
of New York

VIRGINIA AGENCY, AUG. 14, 11 NORTH TENTH STREET.

Richmond, Va. Aug 11th 1883

Dear ^{FILE No.} ~~James~~

Your telegram relative to
your man Friday is received and
my reply would say I am sorry ver-
saciously he seems to be hard at
work but has a discouraged ex-
pression about him. I guess
his work is not of the kind that
stimulates a man's energies. He is
like the rest of us out of funds he
borrowed twenty five dollars from some
of our men saying he would pay
up when he got something from M.
He has about completed his gun
and is now completing it.

Yours Resp
Morse

Regards to all



Edison Electric Light Company
AND
Edison Company for Isolated Lighting.

1883-08-13

Box 311, Boston, Mass.

Spencer Borden, Manager
New England Department.
Herald Building.

Boston: August 13, 1883.

Thomas A. Edison, Esq.

Dear Sir:

Your favor Aug. 5, requesting me to get letters
written to parties marked in the U. S. catalogue, and
when I got the catalogue I found 215 names checked.

As I have a newer catalogue than the one you send,
which I mail you this evening, and if you will mark
such a number of users as we would be likely to
get answers from, I will try to get them for
you.

Yours very truly

Spencer Borden, Manager.
N. E. Dept.

AUG 14

Edison

FILE NO.

FREDY GRINFIELD, President.

1883-08-16

J.C. HARTSHORN, Treasurer

Office of the Providence Steam & Gas Pipe Co.

CORNER PINE & EDDY STS.

PROVIDENCE, R.I. Aug 16 1883

Thos. A. Edison Esq
65 Fifth Ave
New York

Dear Sir

We send you to day by
Express, plans of the Shanghai Cotton
cloth Mill &c. The main Mill and
the wings at each end are three stories
please return these tracings to us as
soon as you are through with them -

Yours truly

Prov Steam & Gas Pipe Co
per R.W.

1883-08-17

EDISON CO. FOR ISOLATED LIGHTING,

Room No. 8, Board of Trade Building,

WM. HODGKINSON, Agent,
Rhode Island and Eastern Conn.

PROVIDENCE, R. I., Aug. 17th 1883.

Saml. Smull Esq.

Dear Sir,

Your favor by Mr. Paine of Aug. 16th to hand asking for plan of Louis O. house basement & height, & the running time of those interested in Providence in lighting by this system.

I will beg to state that on July 4th in my report on page 8, which was sent to New York you will find the running time & the no. of lights as near as can be got at for the year.

Also that on July 16th I forwarded to Major S.B. Eaton a plan of Louis basement which will I think give you all you want to know. If there have been lost or misplaced I will be very glad to furnish one or both,

I remain dear Sir

your obedient servant

Wm. Hodgkinson.

1883-08-12

The Edison Company for Isolated Lighting
of New York.

RECEIVED
AUG 21
VIRGINIA AGENCY, ANNE

11 NORTH TENTH STREET



Aug 21 3
FILE NO

Aug 18th 1883

Sam'l Insull, Esq.

Dear Sir:

Your favor of the
14th inst is at hand. I have
spoken to Mr Moon in regard
to my leaving and he said
that he had written you
fully of the matter. You
have probably received his
letter by this time. We are
now running ten dynamos
and will probably start
the second engine and two
more machines on Monday.
I hope that you will not
delay in sending me money
as I am badly in need

I send by mail a large
litho. of the building.
Yours Very Truly
H. M. Seward

August 18th /88
St. M. Seward
St. M. Seward
St. M. Seward

1883-08-20

August 20/83
 J. H. Hodgkinson,
 Providence
 Central Station

EDISON CO. FOR ISOLATED LIGHTING,

Room No. 8. Board of Trade Building.

PROVIDENCE, R. I., August 20th 1883.

Saml Grout Esq.

Dear Sir,

Your favor of the 18th inst. to hand
 this morning for which believe me
 to be greatly indebted to you.
 In answer to your kind enquiry about
 the lights burned in this Providence District
 I regret to state that I was not fully
 informed on the subject but your letter
 cleared the matter up.
 The list of lights given to you, was the
 total number of Edison lamps to be put
 in at present. I think it will be best to
 take these only, as the rest would be
 too doubtful to figure on. They will be
 burned more or less, as stated, but of course
 the total no. will burn all the time given except on dark
 days, so cannot be given except by
 "Venore". I have seen Mr. Borden & think
 that the idea of having a canvass made
 here, to be most excellent, that will take in

all places such as Club rooms, night schools,
Bars, hotels & restaurants & all the places
using lights late at night, which I could
not so thoroughly get at, even if my other
duties would allow. Capital, there is an
abundance of here if taken in the right
way; but if the scheme of a Co. is to be
entertained (& why it should not I cannot
fail understand), it must be pushed
through, or not undertaken, people here are
all crying out for the Edison light, we have
Weston, American & Maxim in the City &
Brush & Fuller in the mills, but they are
waiting impatiently for Mr Edison's light
which they say is the only one.
If we should have the same experience
here that Boston, Brockton, Fall River &
Norwich, have had it would be fatal,
people are ready to take up a good & paying
article, & where it is a positive necessity
& with everything before it, every chance
& facility, should put behind it, & good
men & the best system. Why should it be
dropped, is it on account of Mr. Geo.
Howard's delay? I fear the Geo. will never
invest a cent in it & I think the ideas
held by the Co. on the Geo. are all wrong.
We have quite as influential men here who
could be very easily influenced & of my
humble opinion is worth anything. I should
advise going in minus Geo. Howard & let him
fall into the ranks if he thinks well.
Believe me to remain dear Sir your obedient servant
Wm. Woodhouse

1883-08-20

EDISON CO. FOR ISOLATED LIGHTING,

Room No. 8. Board of Trade Building.

Wm. HODGKINSON, Agent,
Rhode Island and Eastern Conn.

PROVIDENCE, R. I., Aug 20th 1883.

F S
Mr. Rowland Hayard of Peacedale Mfg. Co.
has just called & asked me my opinion
on lighting some soda works in Syracuse
N. Y. by our system. he thought B
light would be best but I recommended
A lights run low say at 12 candles &
I think that they will take a 300 light
new dynamo. he said he thought there was
no doubt about it. He also asked as
to economy of running & I gave him
ex. on the 100 light dynamo, so that
if any figures that had been given by
the New York office might not possibly
vary from mine. You will if you
think well refer this to the right parties.
Very obediently your servant,

Wm. Hodgkinson Agent.
Providence R. I.

1883-08-21



NEW ENGLAND DEPARTMENT.

BOX 3311, BOSTON, Mass.

HERALD BUILDING

SPENCER BORDER, Manager.

We will pay *you* *9th* *August 21st 1883*
Mr. J. A. Cotton, *AUG 23*
1883

Dear Sir:

I thank you for the liberty to read your reply of 18th to Mr. Spencer Border of the 16th, as Mr. Holbrook wished to learn your opinion on the subject in question.

In partial reply, I would state that we shall be pleased to do anything possible to assist you in preparing plans & estimates for Shanghai Cotton Mill. Any sketch plan showing the arrangement of machinery will be sufficient for the purpose & on receipt of the same, we will proceed to make a detailed plan for installation of lights & an estimate for the same.

Yours Respectfully

J. Border, Jr.

Without cost to you.

1883-08-23

ENGINES, BOILERS

WILSON & ROGERS,

316 and 318 Robert Street.

MILL FURNISHING

Ans. 87
FURNISHING GAS, AND STEAM FITTERS SUPPLIES.
FILE NO.

St. Paul, Minn. Aug. 23^d 1883.

Thos. A. Edison.

Dear Sir,

By a misunderstanding the plans of the Nor Pacific R.R. Shops at Brainard Minn. were sent to N.Y. a few days ago to your address.

They did not know we were attending to this matter, in the office from which the plans were sent.

We expect to submit an estimate tomorrow.

We hope you will keep the plans you have for awhile so they will be before you if we need information.

Yours truly -

Thos. F. Wilson

Steam Pumps,
Injectors,
Inspirators,
Steam Gauges,
Cant Dogs,
Saws, Files,
Emery Wheels,
Rope,
Lath Yarn,
Shingle Bands,
Pulley Blocks,
Lubricating Oils,
Board and Log Rules,
Axes,
Rubber and
Leather Belting,
Hose and Packing,
Wood Pumps,
Iron, Cistern, Well
and Force Pumps,
Gas and Steam
Pipe and Fittings,
Gas Fixtures,
Lead Pipe,
Bath Tubs,
Boilers,
Etc., Etc.

1883-08-23

The Edison Company for Isolated Lighting
of New York.

VIRGINIA AGENCY.

11 NORTH TENTH STREET,

W. PRISTON HIX,

RECEIVED

August 23rd 1883
LOUISVILLE, KY.

Aug 23rd 1883

Sam'l Insull Esq.

Dear Sir

Your favor
of the 21st inst. enclosing check
for \$15.00 is at hand. Please
accept thanks for the same.
It comes at a time when it was
very much needed and will
help me out for a week more.
Two of the engines are at work
each evening and the third
one will be in operation at
the end of the week. The plant
still runs nicely and without
a hitch of any kind. Is there
a probability of Mr. Edison's coming
over next month? Yours Very Truly
H. M. Doubleday

1883-08-24

EDISON CO. FOR ISOLATED LIGHTING,

Room No. 8, Board of Trade Building,

WM. HODGKINSON, Agent,
Rhode Island and Eastern Conn.

PROVIDENCE, R. I., Aug. 24th 1883.

Small City,
Dear Sir,

Your favor of the 23^d inst to hand for which I am exceedingly obliged to you. If I expressed any opinion for or against the Isolated Station in Providence it was unintentional as I did not mean to do so, but leave it entirely to the judgment of my much more competent & experienced superiors knowing that their decision on such a matter will be for the good of the Co, & my interests are those of the Co. also, so if you will be so good as to leave it entirely with them, only with the request that we may have some lights in this City this winter which I know will be to our advantage. I will beg to remain
your obedient servant, Wm. Hodgkinson

Form No. 2.

THE WESTERN UNION TELEGRAPH COMPANY.

THIS COMPANY TRANSMITS AND DELIVERS messages only on conditions limiting its liability, which have been assumed to by the sender of the following message. It is not to be construed against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission of messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNRECEIVED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, *Manager*

NUMBER *127* CITY BY *Lyons* SEND BY *10 PM* CHARGE *10 PM*
 Received at **852 BROADWAY.**

Dated *Boston Aug 31 1888.*

To *Samuel Ince*

45-50 *65-50*

Here fair dynamos.

shipped yesterday if so by what

line

Spencer Bordin

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

47 *48* *49* *50* *51* *52* *53* *54* *55* *56* *57* *58* *59* *60* *61* *62* *63* *64* *65* *66* *67* *68* *69* *70* *71* *72* *73* *74* *75* *76* *77* *78* *79* *80* *81* *82* *83* *84* *85* *86* *87* *88* *89* *90* *91* *92* *93* *94* *95* *96* *97* *98* *99* *100*

Dear Sir *Eligible 7-1-88*
Owing to our unexpected
emergencies at home
we are probably with you
to day, but I
expect you Mr. Hurlburt
at least only a day or
two. The delay is un-
avoidable to be regretted
very much.
Respectfully
Yours *J. B. Porter*



Edison Electric Light Company

AND

Edison Company for Isolated Lighting.

1883-09-01
Box 331, Boston, Mass.

Spencer Borden, Manager
New England Department.
Gerald Building.

Boston, September 1, 1883.

Dear Mr Edison,

Maj. Eaton told me, in confidence, when here last week, the cause of your embarrassment at the machine works. It is deplorable, and I hope the guilty parties may be overtaken and punished. All the same it will not do to let this occurrence hinder your business beyond measure, and I offer you my services to assist you in any way possible. I have helped my friends out of worse scrapes than that, and if I can be of any service to you, send for me, and I will come immediately.

My suggestions I made to Maj. Eaton, that he thought I had better write you, but I have hesitated to do so, not wanting to be thought a meddler. I venture to write them now, as I am certain you will not think me such.

My book-keeper Mr. Rice, is an expert accountant whom I first met in that capacity auditing accounts in Fall River Corporation during the troublous times we had there. He has no superior in the capacity of rooting out crooked ways, and as he is thoroughly in our interest, he

1883-09-01
Box 331, Boston, Mass.

Edison Electric Light Company
AND
Edison Company for Isolated Lighting.

Spencer Borden, Manager
New England Department.
Herald Building.

Boston, _____ *Dr.* _____ 188

He has not his superior as a mechanic, is thoroughly reliable, and would be a prize for you. If you want to see me, write for me, if you want Price and for time, if you want Anthony I will go to Providence and see him. Yours truly



Would be better than a stranger in trying to ascertain your Condition at the Machine Works. You can have him as long as you want him, we can get along here short-handed while he is away. Telegraph if you want him, and do not exhaust yourself with such work.

The other matter is a man to take charge of your Machine Works. I would suggest my brother J. Borden, Jr. who is one of the best mechanics anywhere, and has had much experience handling men, besides being an electrician and an honest man; I do not, however, suggest him as I want to have no suspicion of selfish motive touch this letter. I therefore mention a man I think you could get that I know would suit you. His name is Anthony, and he is now and has been for years Supt. of the Providence Tool Co. Prov. R. I. He is about 40 or 45 yrs. old, a splendid mechanic, who had charge of that big gun contract the Prov. Tool Co. had with the Turkish Govt., and at one time had 1000 men under him, turning out 1000 rifles a week.

1883-09-04



NEW ENGLAND DEPARTMENT.

BOX 3311, BOSTON, Mass.

HERALD BUILDING.

SPENCER BORDEN, Manager.

Boston, September 4th, 1883.

Samuel Insull Esq.

New York City.

Dear Sir:

OK

STENOGRAPHIC

Your favor of the first inst., duly at hand. The letter therein referred to, was by my carelessness, reported to Maj. Eaton, as being from you, though answered more carefully, and ^{the customer} addressed to Mr. Edison. Having been signed "Thomas A. Edison I." I supposed it written by you, and had no idea that it was a matter of such importance, that responsibility for same would be burdensome to any one. Letters frequently come, signed by yourself, on matters of quite as much importance as this, the very next mail bringing one of this kind.

Hoping that any annoyance caused by my mistake may be overlooked, and with the assurance that I will endeavor to discriminate more carefully in future, I remain,

Yours very truly,

Spencer Borden.

1823-09-11

RECEIVED
SEP 13 1883
ANSWERED

FILE NO.

NEW ENGLAND DEPARTMENT.

BOX 331 BOSTON, MASS.

HERALD BUILDING.

SPENCER BORDEN, Manager.

Boston, September 11th, 1883.

Dear Mr. Edison:-

Your personal letter of the 11th, is just at hand. You may be certain that all the "horse power" the boiler will stand will be put into the collection business. You and I know that there is a point at which the safety valve must be set. I will carry steam far enough to let her blow a little and just skim the edge of an explosion, doing all I can without bursting the boiler.

I am glad to hear about the new machines and will come on to see you as soon as I can.

You must come and see the Foreign Exhibition, if only for a night. I want to convince you that the New England Dept., is capable of putting in a big installation promptly. If we have been asked once, we have probably a thousand times, when Mr. Edison is going to be here. Can't you come down some Sat. night, if no other time. Come, and bring Johnson with you.

Yours very truly,

Spencer Borden.

1893-09-11



HERALD BUILDING. SPENCER BORDEN, Manager.

Boston September 11th, 1893.

T.A. Edison, Esq.
105 Fifth Ave.

New York City.

Dear Sir:-

By an unintentional oversight I have neglected to acknowledge the receipt of information in regard to the connections of the 400 light dynamos which you sent me, but being much hurried at the Fair, it slipped my mind entirely. I would therefore at this late day, send my acknowledgement of such receipt.

We had connected the dynamos and had them running before your instructions reached us, as I had understood that the connections were the same as the old K dynamo. We found that that was the case, and the machines are running to-day, as they were first connected. Thanking you for your kindness.

Remain

Yours very truly,

Sidney B. Bain

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
485	Co Rd	650	

Received at 352 BROADWAY.

Dated Newark N.J. 11
To Thomas A Edison
65 Fifth Ave New York 1888.

Hope you have not forgotten
letter
Frank McLaughlin

This telegram has just been received at the office in 352 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
487	Co Rd	18 paid	

Received at 352 BROADWAY.

Dated Newark N.J. 10
To T A Edison
65 Fifth Ave New York 1888.

I'm much obliged for the
letter on Tunnel plant that
is I will be when
I get it
Frank McLaughlin

This telegram has just been received at the office in 352 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

1883-09-14
Ans
17th

EDISON LAMP & LIGHT COMPANY

EDISON COMPANY ISOLATED LIGHTING

NEW ENGLAND DEPARTMENT

BOX 3311, BOSTON, MASS. HERALD BUILDING, SPENCER, MASS.

Boston September 14th, 1883.

Thos. A. Edison, Esq.

65 Fifth Ave.

New York City

Dear Sir:-

Houseville has 14 dynamos
4" 8 of which carry
400 lights each & they
say brushes work beautifully

We find that the brushes on the 400 light dynamos
~~at the Fair, heat very badly even though there may be no sparking.~~
we make all our brushes with the
 instead of having the third brush, as suggested in Mr. Borden's
brushes you have
 letter, will you please send on, if you consider it practical, a
 set (4) of the 1200 light dynamo brushes. The brushes at present
 used on the 400 light machines, are identical with those used on
 the old "L", although carrying nearly three times the current.

As our Mr. Moore suggests, the commutator blocks have a
 much larger area than in the smaller machines, yet the bearing end
 of the brush, is not increased in the same ratio.

Yours very truly,

Guonell = drop note to Sidney B. Paine.
ask if there is any difference
between H brush & L brush
Boston Fair machines may have had L brushes
sent by mistake = Edison

Sidney B. Paine.
 For K.
 11th

1883-09-15

Department of Stations and Buildings.

C. C. LOVEJOY, Supt.
WALTER KATTE, Chief Engineer.

The North River Construction Company,

NEW YORK, WEST SHORE & BUFFALO RAILWAY,
ENGINEERING DEPARTMENT,

CHESEBROUGH BUILDING—No. 24 STATE ST.

New York, Sept. 15, 1903.

The Edison Electric Light Co.,

65 Fifth Ave., City.

Gentlemen:—We are now prepared to obtain proposals from you including specifications, for lighting the 60-foot passage, three of the ferry slips, the main waiting rooms, also ferry passage way and 40-foot passage way, restaurant, ladies' waiting room and smoking room, in our terminal passenger station at Weehawken. Plans can be seen at this office. Will you kindly oblige me by this proposal and specification at your earliest convenience.

Yours respectfully,

A. C. Blouchard
Asst. Supt. Stations & Buildings.

1883-09-20

Department of Stations and Buildings.

C. C. LOVEJOY, Supr.
WALTER KATTE, Chief Engineer.

The North River Construction Company,

NEW YORK, WEST SHORE & BUFFALO RAILWAY,
ENGINEERING DEPARTMENT.

CHESEBROUGH BUILDING—No. 24 STATE ST.

New York, Sept. 20, 1883.

The Edison Electric Light Co.,
65 Fifth Ave., City.

Gentlemen:—I wrote you some time ago in relation to lighting
our terminal passenger station, at Weehawken, and have received no
response from you on this subject. I wish you now to include
in your proposal a specification for lighting two temporary plat-
forms and platform covers, each about 650 feet long; also to sub-
mit a specification and proposal for lighting the whole of the
Weehawken Tunnel, about a mile and an eighth in length. Your
early compliance with these requests will greatly oblige,

Yours respectfully,

H. C. Thacher
Asst. Supr. Stations & Buildings.

Wm. Edison

*Where is the blue
prints Hutch Sap
he sent here*

1883-09-20

The Edison Company for Isolated Lighting
of New York.

388 WEST MAIN STREET.

KENTUCKY AGENCY.

Louisville, Ky. Sept 20 1883.

OK
governor
Carlee

Thos. A. Edison Esq.
Dear Sir

Enclosed.

Please find some Indicator
Cards taken from the Corlies Engine
high and low pressure.

The plant still runs with
undiminished success. the
breakage of lamps is at an
average of nine ten a day
at this time. I saw Mr
Stuart on Sunday and explained
fully to him my position

Yours Truly

H. M. Doubleday

Will send some better Cards in a few
days.

56
Sept 24/83

G. Bulton

recd of 24th

1883-09-24

Department of
Public Charities and Corrections,
City of New York
Commissioner's Office
New York, Sept 24th 1883.
J. H. Bulton
in New York

Referring to your
communication of this
date, I am directed by
the Commissioners to state
that they would be pleased
to receive within a day
or two, an estimate for
lighting Hawks or Wards
Island, or both.

Very Resp.
G. Bulton
Secretary

1883-57-29

The Edison Company for Isolated Lighting
of New York.

KENTUCKY AGENCY.

308 WEST MAIN STREET.

Louisville, Ky. Sept 29th 1883.

Sam'l. Lucull. Esq.

Dear Sir

Enclosed

please find cards. Please
excuse omission in data in
regard to same. I have no news
in regard to the Plant other than
to report its continued successful
operation - Next week I shall
make tests as to the drop of
pressure in different parts of the Circuit
I shall be glad to hear as to
the cards when figured

Yours Truly

H. M. Dowd

RAY V. FIERCE, . . . President.
GEO. H. VAN VLISSON, Vice-President.

OFFICE OF THE

1883-10-03
JAMES A. ROBERTS, . . . Secretary.
JAMES H. DU GRAPP, . . . Treasurer.

→:BIG+BEND+TUNNEL+AND+MINING+COMPANY:←

Buffalo, N. Y. Oct. 3d, 1883, 18

Major Frank McLaughlin,

Park House, Newark, N. J.

Dear Friend:- I enclose herewith letter received from Mr. Harris with drawing of tunnel, &c.

Mr. Harris, of course, figures on large, powerful lights, something similar to the Arc light, I take it, from the number of lamps that he specifies. Of course Mr. Edison will understand that only the ^{plainest} ~~plainest~~ and most common kind of fixtures are required for these rough boarding-houses, black-smith shops, tunnel, &c.

Another thing which he does not seem to take into consideration is the fact that the plan would be valuable after the tunnel is completed. The wires could be taken out and all the fixtures and used in our boarding-houses, offices, and even in lighting up the river where our work was going on; and perhaps we may have some quartz mines by that time that will require lighting up to work. ~~But~~ ^{We} could put in a small boiler, as Mr. Harris suggests, to run through the winter, but ^{at} all other times we should probably have plenty of power.

We have not yet got the assay of the two last samples of quartz, - No. 26 and 38, - ~~and~~ We presume from reports that there is very little of the soft rotten rock in the ledge, but I have asked Mr. Harris to give more particulars with respect to it.

Very truly yours,

J. A. Roberts

[ENCLOSURE]

JAY V. PIERCE, . . . President.
GEO. H. VAN FLECK, Vice-President.

OFFICE OF THE

1883-09-25
JAMES A. ROBERTS, . . . Secretary.
JAMES H. DE GRAFF, . . . Treasurer.

→*BIG+BEND+TUNNEL+AND+MINING+COMPANY*←

Copy

Buffalo, N. Y. SEPT. 25, 1883. 18

HON. R. V. PIERCE,

PRES. BIG BEND T. & M. CO.,

BUFFALO, N. Y.

DEAR SIR: IN REPLY TO MR. EDISON'S IN-
QUIRIES ABOUT POSITION OF BUILDINGS, AND LAMPS REQUIRED, I HEREWITH IN-
CLOSE YOU A PLAT, SHOWING RELATIVE POSITIONS OF BUILDINGS, AND DISTANCES
BETWEEN THEM.

IN REGARD TO THE NUMBER OF LAMPS, I WOULD SUGGEST THE ARRANGEMENT
BELOW. AT SLEEPING HOUSE NO. 1, WHICH IS DIVIDED INTO TWO ROOMS, SAY
2 LAMPS.

AT SLEEPING HOUSE NO. 2, 1 LARGE LAMP, OR, WHAT WOULD BE BETTER, 2
SMALL LAMPS.

IN BOARDING HOUSE, 2 LARGE LAMPS IN DINING ROOM; 1 LARGE LAMP IN
KITCHEN; IN WASH ROOM AND CHANGE ROOM, 1 LAMP EACH, MAKING FOUR FOR THIS
HOUSE.

IN ENGINE ROOM, 2 LAMPS, ONE IN FRONT OF ROOM, THE OTHER BACK OF THE
COMPRESSOR, AND ONE SMALL LAMP AT CORNER, NEXT TO WATER-WHEEL, TO LIGHT
PASSAGE WAY ON TRACK.

AT CORNER OF BLACKSMITH SHOP, ONE LAMP FOR CROSSING OVER CREEK.

IN THE WORK-SHOP, I WOULD SUGGEST THAT THE WIRES BE SO ARRANGED THAT
THE LIGHT COULD BE USED AT EITHER FORGE OR BENCH; ORDINARILY TWO LAMPS

RAY F. PIERCE, . . . President.
GEO. H. VAN FLECK, Vice-President.

OFFICE OF THE

1883-09-25
JAMES A. ROBERTS, . . . Secretary.
JAMES B. DE GRAPP, . . . Treasurer.

→BIG+BEND+TUNNEL+AND+MINING+COMPANY←

Buffalo, N. Y. 18

2.

WOULD ANSWER ALL PURPOSES.

AT 2ND POWDER HOUSE, ONE LAMP AT DOOR TO LIGHT INSIDE OF HOUSE AND THE TRACK AT THIS POINT. THERE IS NO NEED OF A LIGHT IN THE MAIN POWDER HOUSE, AS IT IS ONLY USED DURING THE DAY-TIME.

FROM THE 2ND POWDER HOUSE, DOWN THE DUMP, THERE WOULD BE NEEDED ENOUGH LAMPS TO SO LIGHT THE TRACK, THAT THE MULES CAN TRAVEL WITH EASE. THERE WOULD BE ONE LIGHT NEEDED AT THE END OF THE DUMP; THE TOTAL NUMBER OF LAMPS WOULD DEPEND ON THE LENGTH OF TRACK WHICH WOULD BE LIGHTED BY EACH LAMP.

IN THE TUNNEL, FROM THE MOUTH UP TO THE SWITCH, THERE WOULD BE NEEDED ONLY SUFFICIENT LAMPS TO MAKE IT LIGHT ENOUGH TO SEE THE ROAD-WAY. AT THE SWITCH THERE SHOULD BE AT LEAST TWO LAMPS, ONE AT THE HEAD, AND THE OTHER AT THE FOOT OF THE SWITCH; THESE LAMPS OUGHT TO BE ARRANGED SO THAT THEY CAN BE EASILY MOVED AHEAD AS THE SWITCH IS ADVANCED.

IN THE FACE THERE WOULD BE NEEDED ENOUGH LIGHT TO MAKE EVERY THING STAND OUT DISTINCTLY, AS THIS IS THE POINT WHERE AN ABUNDANCE OF LIGHT IS MOST NEEDED; AS TO THE NUMBER OF LAMPS THAT WOULD BE NECESSARY, MR. EDISON IS BETTER ABLE TO JUDGE THAN I AM, BUT PROBABLY THREE LAMPS WOULD ANSWER.

WHILE WE ARE RUNNING BY STEAM WE HAVE POWER TO SPARE; PROBABLY WE COULD SPARE 15 H. P., AND NOT CROWD THE BOILER, OR STINT THE COMPRESSOR.

[ENCLOSURE]

HAY V. PIERCE, . . . President.
GEO. H. VAN VESON, Vice-President.

OFFICE OF THE

1813-10-03
JAMES A. ROBERTS, . . . Secretary.
JAMES H. DE GRAPP, . . . Treasurer.

→ THE BIG BEND TUNNEL AND MINING COMPANY ←

Buffalo, N. Y. _____ 18

3.

WHEN RUNNING THE COMPRESSOR BY WATER POWER, WE WOULD BE COMPELLED TO KEEP UP STEAM ON THE BOILER, AS THERE IS NO POWER TO SPARE FROM THE WATER-WHEEL; IN THE EVENT THAT THE COMPANY SHOULD DECIDE TO PUT IN THE ELECTRIC LIGHT IT WOULD PROBABLY BE BETTER TO PUT IN A SMALL BOILER TO RUN IT DURING THE WINTER.

FROM WHAT I AM ABLE NOW TO JUDGE BY, I THINK THAT CANDLES ARE DECIDEDLY CHEAPER IN A FINANCIAL SENSE, BUT THERE CAN BE [NO] DOUBT OF THE SUPERIORITY OF THE ELECTRIC LIGHT.

ESTIMATING OUR CANDLE BILL AT THREE HUNDRED DOLLARS PER MONTH, FOR TWO YEARS, THE COST WOULD BE \$7200, A SUM WHICH WOULD NOT PAY THE FIRST COST OF THE ELECTRIC SYSTEM. IN ADDITION TO THIS THERE WOULD BE THE COST OF MAINTENANCE OF THE LIGHT, THE COST OF REPLACING LAMPS, AND OF GRADUALLY EXTENDING THE WIRING AS THE TUNNEL ADVANCED; THESE ITEMS I AM NOT ABLE TO ESTIMATE; STILL, I MENTION THEM, IN ORDER TO GET AN ESTIMATE FROM PERSONS WHO ARE FAMILIAR WITH THE LIGHT.

I AM, YOURS TRULY,

N. A. HARRIS, S. U. P. T.

THE EDISON COMPANY }
FOR ISOLATED LIGHTING. }

GENERAL MANAGER'S OFFICE,
65 FIFTH AVENUE.

1883-10-08

Please address reply to the undersigned.

New York,

Oct 8th

1883

A. E. Department Statement Profit & Loss.
Jan'y, 1st 1883 to September 1st 1883.

Sales (including Lamp Renewals)	67,937.09
Cost of Installation	49,102.77
Less overcharge to Edward	1,551.34
" Co. Jefferson	500.00
	<u>2,051.34</u>

16,782.98

Expenses & Accounts

Office Expenses	1,334.18
Sundry "	1,814.91
Agents Compensation	8,466.65
Advertising & Circulation	
Store Expenses	1,435.10
Sundry Inst. Exp.	20.75
Additional Salaries	3,675.00
Springfield Agency	794.92
Goodwill	<u>432.26</u>

17,973.77

Reynolds & Co.	
Appreciation	911.16
Interest	729.96
Revenue	<u>378.52</u>

Loss
Loss on Return

1,190.79
1,267.66

Total Loss

2,458.39

THE EDISON COMPANY
FOR ISOLATED LIGHTING.

GENERAL MANAGER'S OFFICE,
65 FIFTH AVENUE.

1883-10-08

Please address reply to the undersigned.

New York, 188

General Office

From Jan. 1st 83
Sept 1st 1883.

Profit & Loss 1883

Sales 309,826.19
Cost of Installation 209,660.44

50,165.75

Expense of

Office Expenses 3,129.33
Electrician Salaries " 6,183.29
Sundry " 3,416.85

Supply Store Superintendent 7,140.78
Estimator 640.73

Labor 302.37

Insurance 561.79

Village Plant Estimates 696.07

Surplus 33.

Fund of Profit 44.34

Agents Compensation 12,972.24

Expenses

35,120.99

Total Profit

\$15,044.96

EDISON COMPANY FOR ISOLATED LIGHTING.

1883-10-13

GENERAL MANAGER'S OFFICE,
65 Fifth Ave., N. Y.

MEMORANDUM.

ACK 13 1883

Mr. Inman:

Will you kindly get a report from your
Mercantile Agency of the standing of Mr. John Pardey,
Woolen Manufacturer, Germantown, & Philadelphia.

We are beginning to make an installation for
him & if we accept the order, we would
like to have this report. If we can do any
thing to return the favor. Kindly command us
J. H. Hutchinson

1883-10-24

The Edison Company for Isolated Lighting.

AGENCY FOR

Maryland, Western Pennsylvania and District of Columbia,

No. 3 Hoar Building, Lexington Street.

Baltimore, Md. Oct. 24th 1883.

Mr. Thos. A. Edison

Dear Sir's

Mr. G. G. Hubbard
of Washington D. C. will meet me at
my office No. 65 Fifth Ave. Sat. next be-
cause I will 10 o'clock A. M.

Mr. Hubbard wish-
es to see you for consultation on a Company
in Washington,

Very truly yours
Henry R. Clark

PK

ENGINEER'S REPORT

of operation of Plant at

Geo. Campbell

Continental Mill.

Phil^a. Pa.

First commenced running *Sept 25th* 188*9* at *5:45* o'clock *P.* M

Daily run from *5:30* o'clock *P.* M. until *3:30* o'clock *P.* M.

Dynamos installed *2* *L* *A*

What kind of power used *Steam*

Diameter of driving pulley if run from countershafting *40"*

Speed of armature without load *940* *Rv.*

Speed of armature with load *850* *900* "

Speed of driving pulley *314* *330* "

Is power furnished regular *Generally, Yes*

What is maximum steam pressure during } *10* *75-lb.*
hours dynamos are operated }

Minimum pressure during same period *54* *70* "

Condition of dynamo when plant started *Armatures in*

bad condition. One out of true, the
other with 2 connections not soldered.

Any trouble with armature bearings during } *Bearings, one on*
operation of plant }

Pulley end, the other on commutator end
heated very much, remedied by scraping.

Is load on dynamo constant *Generally, Yes*

Maximum number of lamps in circuit at any one time *300*

Minimum number of lamps in circuit at any one time *150*

If automatic regulator is in circuit does it work well *—*

Lamp record of running plant for

Geo. Campbell

Continental Mill.

Phil. - Pa.

DATE.	HOURS RUNNING.	AVERAGE NO. LAMPS IN CIRCUIT.	LAMPS BROKEN.
Sept 35	3 1/4	145.	
" 37	3 1/4	145.	2
" 38	3 1/4	145.	
Oct 1	2 1/4	209.	
" 2	2 1/2	209.	4
" 4	3 1/2	296.	
" 5	3 1/2	296.	3
" 8	3 1/2	296.	
" 9	3 1/2	296.	6
" 11	3 1/2	296.	
" 12	3 1/2	296.	2
" 16	3 1/2	296.	
" 17	3 1/2	296.	
" 18	4	296.	2
" 19	5	296.	1
" 20	1	296.	2
" 23	4 1/2	300 276	6
" 24	1	300 276	4
" 25	3	300 276	
" 26	3 1/2	300	
" 27	1/2	308	

NOTE.—THIS RECORD MUST
BE ACCURATELY KEPT FROM THE
DAY PLANT FIRST STARTS UNTIL
OUR ENGINEER TURNS IT OVER TO
PURCHASER.

2 Lamps defective.
8 Broken by accident.

Describe general condition of plant when left

One armature gave trouble at first caused by two broken connections. They were soldered.

The other gave trouble with loose commutator bar, it was then turned off.

They then worked good, except slipping belts, until Oct. 23, when one was strained caused by misplaced brush, that one was exchanged, since then they have worked good. Slipping belts were partly cured by belt tightener.

Some lamps, in this order of 75, have blown off plaster stems, caused by vibration in the plaster, due to exposure in shipping.

Plant turned over to Purchaser Oct. 27 1883

SIGNED,

H. W. Burnett

Engineer in charge.

Maxim

1883-11-15

Mr. Edison,

The Maxim people are waking up in New England.

They have got an order from the Pacific Mills, Lawrence. It is a big corporation. I am writing Lawrence Lord about finding out about it. Probably it was the personal influence of some of the Directors.

The Maxim people have also just captured a small order at South Boston, probably by bidding lower than Borden did for the same job.

S. B. Eaton

Nov. 5th. 1883.

per Mc.G.

ACE

1883-11-10

Nov 16

1883

Excess in. for Isolated Lightning
To Aperto Expenses

74⁵⁹

Double days Expense

10
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1883-11-17

EDISON ELECTRIC LIGHT COMPANY
EDISON COMPANY ISOLATED LIGHTING.
NEW ENGLAND DEPARTMENT.

BOX 3311, BOSTON, MASS. HERALD BUILDING. SPENCER BORDEN, Manager.

Boston, November 17th, 1883.

Thos. A. Edison, Esq.

65 Fifth Ave.

New York City,

Dear Sir:-

Herewith find letter received by Hodgkinson about Webster. I suppose you will want something more accurate, and if you direct, will have it made.

I have no answer to my suggestion about the spare engine and dynamos for the Norwich and Natick stations. Are you willing to let them stand as at present?

Yours very truly,

*Spencer Borden, Manager
New England Dept.*

Mr. Edison,

[883-1121

This is the ticket elected at the isolated annual meeting.

S. B. Paton

Nov. 21st. 1883.

per Mc.G.

F.

1883-11-20

25

Edison Co. for Isolated Lighting

November 20th 1883

For Trustees

Thomas A. Edison

S. B. Eaton

E. H. Johnson

Chas. H. Coster

Spencer Trask

J. C. Henderson

Anthony J. Thomas

For Inspectors of Election, at
next annual meeting

H. M. Francis

C. Burham

E. C. Davidson



THE EDISON COMPANY }
FOR ISOLATED LIGHTING. }

GENERAL MANAGER'S OFFICE, 1883-11-21
65 FIFTH AVENUE.

Please address reply to the undersigned.

New York, Nov 21st 1883. 188

Thomas. A. Edison. Esq.

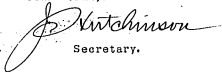
New York:

Dear Sir:-

I beg to advise you that at the annual meeting of our
stock-holders, held Nov 20th, you were elected a trustee ^{of this company} to serve
for the coming year.

The first meeting of the new Board will be held on
Tuesday Nov 27th, at the offices of Drexel, Morgan & Co, Cor Wall
& Broad Sts, at 3.15, P. M. as per enclosed notice.

Yours truly.


Secretary.

1883-11

Edison Co for Isolated Lighting

Oct. 3	Blue print Steamboat	4 Nos. 28	1.00
9.12	" " Belcher's Sugar House (Potts)	1/2 " 25	.38
19	" " " "	3 " 11	.75
19	4 Yds 28" paper for above	" 60	2.40
27	" " City of Worcester (Potts)	3 " 25	.75
27	" " A.B.C. Dynamometer Sheffield	9 " 25	2.25
			<u>7.53</u>

Lawassing 3.77

Engineering 3.76

7.53

1883-12-05

Nathan & Dreyfus,
92 & 94 Liberty Street,
New York, Dec. 5th, 1883

Chas A Edison Esq
65. 5th av
City

Dear Sir
Replying to your
favor of 4th inst. we would
say the goods included
but were ordered by
W F Moore

Yours Truly
Nathan & Dreyfus
J. Dreyfus & Co

RECEIVED

DEC 6 1883

ANSWERED

Dec 6/3

FILE No.

1283-12-11

OFFICE OF THE AGENCY

THE EDISON COMPANY FOR ISOLATED LIGHTING,

No. 6 LEDGER BUILDING,

Cath and Chestnut Sts.

JOHN HOSKIN

Agent for the
States of Pennsylvania, New Jersey,
and Delaware.

Philadelphia, Dec 11 1883

Thomas A. Edison Esq
New York } Dear Sir,

Permit me to trouble you for an opinion on the following point. To

Is there any sufficient reason against running dynamos of unequal sizes in multiple arc? as for instance a 100lt & a 200 lt. dynamo on same circuit - or a 100lt & a belt, which I am now setting up.

Such cases may come up, when the customer prefers to use 2 dynamos instead of one - for instance the smaller one by day, & the both by night -

Is there any special care needed in the selection, or running of such dynamos arising from any tendency in the larger to overload the smaller one -

It has seemed to me that if both are driven from the same source of power & that if the electromotive force of both dynamos be equal, that the difference in size of the dynamo is of no consequence except as a question of quantity - I am told that I am wrong, I take the liberty of appealing to you

Awaiting the favor of your reply I am

Yours Truly Respectfully
John Hoskin off

If the speeds of both dynamos do not vary much from what they are set up at & the resistance (spires) are proportioned so the load will divide according to the capacity they run together = 100% do it without ~~any~~ ^{any} ~~slight~~ ^{slight}

The Edison Company for Isolated Lighting,

New York,

Dec 13 1883

SUPERINTENDENT'S OFFICE.

87 SIXTH AVENUE.

Mr. L. L. Clarke

Esq. Sept.

Dear Sir:

We use the ^{Common Swiss Metallic Packing} common Swiss Metallic packing on our engine - the 14 1/2 x 13 - require 7/8" for piston rod and 3/4" for valve rod. 20 feet of each size should be sufficient for three years.

Address
Common Swiss Pkgs
#46 - Walker St
City.

J. M. Rail

THE EDISON COMPANY FOR ISOLATED LIGHTING
JOHN HOSKIN,

4th STORY FIVE-46
PENNSYLVANIA, NEW JERSEY AND DELAWARE,
No. 5, Ledger Building, (11th & Chestnut Sts.)

Philadelphia, Dec 13 1883

Thomas A. Edison Esq.
New York Dear Sir

Thank for your letter of 12th, on running two dynamos of dissimilar sizes on one circuit.

In my enquiry I should have said that I meant only one resistance box, for both dynamos, as is usual when we run two or three dynamos together.

Do I understand you to say that it is necessary for the proper running of two dynamos of unlike sizes, that there should be a resistance box for each dynamo -

Regarding the trouble you

have

two resistance boxes I am very sorry, but connected together John Hoskin
So both will run fine together, but detached will not. E

(Electric Light -
Sketches and Notes)
1880?)

out Caswell (H. Hagan), 30.
 out Star & Mando, 20
 out General Store on 6th Ave
 out Union League Club, - 32
 out Union Club, 20
 out Fisk Hatch, ours in
 out Commercial Advertiser, Ours in
 Perego - Ours is to go in
 out Metropolitan Nat'l 60
 out St Michael's " 60
 Ascertain if Wash. Mkt.
 out Wumbo out ours in
 out Currier ~~out~~
 Palmer Hn Chicago.
 1st National Bank Chicago Ours in
 Capital Albany find out if running
 Circular about Bay City plant,
 going
 Courtlandt St Station 10
 Hoffman House - 180
 W U Tel -
 Durr Wiman & Co. 20
 Brunswick 24
 Cigar Store near Corwell + New.
 Stude & Vanits,
 Vanits Safe deposit Under Equitable,

THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

CABLE ADDRESS—EDISON, NEW YORK.

Edison Company for Isolated Lightning 

Mach. Wks subscribed for the following:-

Chas. Batchelor	73 Shares
Wm. A. Edison	465 "
Rosanna Batchelor	2 "
Samuel Insull	10 "

552

Batchelor took ~~25~~

55

Edison bought 10 Shares —

497

Transfers:-

507

W.S. Perry	10 Shares
W.N. Vennart	250 "
C. Batchelor	50 "

310

New Bond being carried by Mach Wks

997

W.A. Edison	465
Rosanna Batchelor	2
S. Insull	10
Chas. Batchelor	73

552

(1283)

Senate Chambers

1000 ft # 10

" " # 14

500 " # 18

" " " 12

4 = 30 Light Switches

4 - 15- " "

12 Vertical Main Cables

2 lbs Solder

2 " Tape

2400 ft # 12

" " # 14

" " # 18

60 Cables 30 Vertical - 30 Branch Co

30 - 15 Light Switches

400 ft # 3

" " # 4

5 lbs Solder

5 lbs Tape

Vertical Main { 400 ft # 0.3
200 " # 3 }

(1823)

PRICES QUOTED F. O. B. NEW YORK.

One 8 1-2 X 10 Armington & Sims Engine.....	968.75;
Foundation plate and washers.....	33.00;
Foundation bolts and pipes.....	8.36;
One pair crank pin boxes.....	12.50;
One Broughton Lubricator with yoke.....	15.00;
One 100 light dynamo.....	1631.25-
One extra armature.....	767.50;
One resistance box.....	110.00;
One pressure indicator.....	55.00;
One extra pressure indicator.....	55.00;
2000 feet No. 10 Paragon Wire.....	56.98;
1000 " " 12 " " ".....	20.35;
1500 " " 14 " " ".....	20.57;
1000 " " 16 " " ".....	8.47;
125 safety catch plugs assorted.....	61.60;
12 Switches (2 of 25, 5 of 12, 5 of 6,).....	45.10;
100 feet flexible conductor.....	11.00;
50 ceiling blocks.....	16.50;
20 double branch cut outs.....	10.50;
200 cleats.....	1.98;
100 porcelain Insulators.....	4.40;
10 lbs insulating tape.....	3.30;
20 one light Electroliers.....	33.00;
50 one light Swing Brackets.....	178.75;
30 two light Electroliers.....	214.50;
150 16 candle power lamps.....	150.00;
100 nickel plated metal corrugated Re- flectors.....	<u>30.80;</u>
TOTAL.....	\$4,544.22;

1883. Electric Light - Edison Electric Illuminating Company of New York (D-83-026)

This folder contains correspondence and other documents relating to the business of the Edison Electric Illuminating Company of New York, which operated the Pearl Street central station. Much of the correspondence is by Charles E. Chinook, superintendent at Pearl Street. Related material can be found in the Edison Electric Light Company Bulletins (Company Records Series).

Approximately 30 percent of the documents have been filmed. The following categories of documents have not been filmed: routine notices for meetings of the board of directors; receipts; duplicate copies of selected documents.

January 4 1883

Passenger into
Central Station

C. D. Don

Mr. Edison,

1st District Light Station

1883-02-01

On Jan. 30th. bills for lighting were collected in
the First District from six people, the six bills aggregating
about \$78.69.

S. B. Eaton

Feb. 1st: 1883.

per Mc.G.

The Edison Electric Illuminating
Company of New York,
65 Fifth Avenue.

1883-02-06

New York, Feb. 6 1883

J. A. Edison Esq.

Present.

Dear Sir,

The earnings, & collections
by 1st District to present time are
as follows.

Jan	my	243.36
	27	31.06
	30	31.57
	31	75.60
Feb	1	11.33
	2	36.27
	3	36.07
	4	15.55
	6	202.73
		787.27

Above is sent you at request of
Mr. Hastings. Yrs very truly
S. Allen
Cashier

THE EDISON ELECTRIC ILLUMINATING COMPANY OF NEW YORK,

SUPPLY DEPARTMENT,

106 COERCK STREET.

*Duplicate*Stock report for week ending *February* 1883

MATERIAL.	BALANCE FROM LAST REPORT.	RECEIVED.	SHIPPED.	ON HAND.	REMARKS.
<i>Nire</i>					
10 Cables	359 1/4			359 1/4	
10 Paraffins	2216 7/8	230		2446 7/8	
125 "	1194 3/4	77 1/2		1272 1/4	
14 "	975 3/4	37 1/2		938 1/4	
<i>Total</i>	4174 6 1/4	244 1/2		4419 1/4	lb
<i>James Peeling</i>					
<i>Staples</i>	321 3/4			321 3/4	lb
3/4 inch	69 1/4			69 1/4	
1 "	57 1/4			57 1/4	
1 1/4 "	34 1/4			34 1/4	
1 1/2 "	25		25	-	
<i>Total</i>	186		25	161	lb
<i>3/4 inch Screws</i>	93			93	Iron
<i>Drumming out out</i>	1839	300		1539	No
<i>Individual Blamps</i>	4509			4509	No
<i>Cut out</i>					
Coiling	316	1216		1576	
Vertical	103	216		319	
<i>Total</i>	419	1837		2246	No
<i>Anderson Tubes</i>					
No 8	1528			1528	
" 9	1087			1087	
" 11	1514			1514	
<i>Total</i>	4129			4129	No

THE EDISON ELECTRIC ILLUMINATING COMPANY OF NEW YORK,

SUPPLY DEPARTMENT,

106 COERCK STREET.

Stock report for week ending

February

1883

MATERIAL.	BALANCE FROM LAST REPORT.	RECEIVED.	SHIPPED.	ON HAND.	REMARKS.
<u>Sockets</u>					
Old Brass	11853			633	
New "	5			5	
" No "	190			190	
Plain "	75			75	
" " "	9925			9925	
Total-	1895			1895	no
<u>Blamps</u>	133			133	no
Iron binding blamps	1868	353		2221	Plain
<u>Wires</u>	4534			4534	no
<u>Tools</u>					
Gas Pipe Drill	36			36	no
Steel "	22			22	"
Gas Soldering Iron	84			84	"
4 lb " "	41			41	"
1 " " "	44			44	"
2 " " "	3			3	"
Wires	16			16	"
Braces	21			21	"
Crew Drivers	3			3	"
Plies	21			21	"
Wood Chisels	21			21	"
Gold "	10			10	"
Step Ladders	3			3	"
Signal Points	7			7	"
Sawfiles	8			8	"
<u>Plugs</u>	1116			1116	"

THE EDISON ELECTRIC ILLUMINATING COMPANY OF NEW YORK,

SUPPLY DEPARTMENT,

106 COERCK STREET.

*Duplicate*Stock report for week ending *February*

1883

MATERIAL.	BALANCE FROM LAST REPORT.	RECEIVED.	SHIPPED.	ON HAND.	REMARKS.
<i>Resistance Boxes</i>	<i>216</i>			<i>216</i>	<i>no</i>
<i>Small Switches</i>	<i>139</i>			<i>139</i>	<i>no</i>
<i>Iron Bracket</i>	<i>14</i>			<i>14</i>	<i>no</i>
<i>Pulleys Hooks</i>	<i>36</i>			<i>36</i>	<i>no</i>
<i>Leading Flanges</i>	<i>377</i>			<i>377</i>	<i>no</i>
<i>Pull Indicators</i>	<i>34</i>			<i>34</i>	<i>no</i>
<i>Pulleys Hoase</i>	<i>58 7/8</i>			<i>58 7/8</i>	<i>cut</i>
<i>Hard Rubber Pipe</i>	<i>16 7/8</i>			<i>16 7/8</i>	<i>lbs</i>
<i>Runway Blocks</i>		<i>1434</i>		<i>1434</i>	<i>no</i>
<i>Iron Wire Clamps</i>		<i>1991</i>		<i>1991</i>	<i>lbs</i>

D. L. H. K.
Stockkeeper

1883-03-07

Mr. Edison,

We find there is such a boom in real estate between say 36th. street, 43rd. street, 6 avenue and 8th. avenue, owing to the theatres, hotels and apartment houses now being talked of in that locality, that we cannot get any real estate anywhere near the centre of that district without paying an exorbitant price for it, say about \$100,000 for 100 feet square, and we cannot get any at that price that is near the centre of the district. You remember the district extends from 34th. to 44th. street and from Madison Avenue to 8th. avenue.

We can buy 100 feet square at the centre of the 28th. district, namely, a little west of 6th. avenue on 29th. street, for about \$50,000.

We can buy 100 feet square on 46th. street a little west of 6th. avenue on the south side of the street for about \$70,000.

Now, what both of these places are, outside of the district in question. How would it do to take the 46th. street piece and carry conductors down as far as the Casino at 39th. street, although beyond the district? Or would you rather take the 29th. street piece and carry conductors up to 39th. and 40th. streets to light the Casino and the Opera House?

Please send an answer tomorrow morning without delay so that I can have your views for the meeting tomorrow afternoon.
S. H. Eaton
March 7th. 1883.

per H.C.C.

Report of the Sub-Committee of the Board of Directors of the Edison Electric Illuminating Company of New York City, appointed at a meeting of the Board held March 8th, for the purpose of recommending to the Board a plan to raise funds for starting an uptown district in the City of New York. The committee consists of Messrs. Eaton, Wright, Villard, Pabbri and Navarro.

FIRST. The district recommended to be lighted includes the territory bounded by Twentieth Third and Thirty Fourth Streets, Madison and Eighth Avenues. That is one block larger than the old Twenty Eighth or Madison Square district, which commenced at Twenty Fourth street, instead of at Twenty Third street as is now proposed.

SECOND. The Illuminating Company to issue a mortgage for \$600,000 on its entire property in the First District (the district now lighted from the Pearl street station), also upon its proposed property in the proposed Twenty Eighth District.

THIRD. The mortgage is to be a six per cent gold bond, 40 years, convertible into a 12 per cent preferred stock at the option of the holder within five years from date of bond; with a second privilege to the holder of the preferred stock to change the same, share for share, into common stock within 10 years from

the date of the bond. There is to be a sinking fund after five years, also a privilege for the Illuminating Company, to retire the bonds either in whole or in part, after five years, at an advance of 10 per cent premium, that is to say at \$110. per \$100. bond. Where less than the entire bonded indebtedness is retired at any one time, the selection shall be made by drawing, but in no event shall less than one per cent of the said \$600,000 bonded indebtedness be retired in any one year.

FOURTH. Of the said \$600,000 bonds, \$375,000 shall at once be offered at par to the stockholders of the Illuminating Company of record on the day of 1883, in the proportion of one bond of \$100 for every two shares of stock held by them; and the balance of the \$600,000 to be held in the treasury for the future wants of the Company. Any part of the said \$375,000 bonds, thus offered to the stockholders, that may not be subscribed for by the stockholders, may be sold by the Board of Directors at their discretion for the best interests of the Company.

FIFTH. Any existing mortgage on the real estate of the Company shall be paid out of the first money received from the sale of these bonds.

SIXTH. Regarding compensation to the Light Company under the existing contract between it and the Illuminating Co. for

payment for license, the following arrangement is recommended:

(1) The Light Company to permanently reduce all its future per centage under the existing contract from 35 per centum (25 P. C. in stock and 10 P. C. in cash) to 25 per centum (20 P. C. in stock and 5 P. C. in cash) and the existing contract to be permanently altered accordingly.

(2) Under the existing contract the Light Company was entitled to receive and has received, on the Illuminating Co's capital of \$1,000,000., \$250,000 in stock. It was also entitled to receive \$100,000 in money, of which it had received on March 1st. \$34,900.00., of which amount \$21,200.00 has been invested in ^{Illuminating Co's} additional stock, at par. The Light Co. has also made cash advances to the Illuminating Company, up to March 1st., amounting to \$21,670, leaving \$42,000.00 credited to the Illuminating Company account on March 1st. Referring to the above Illuminating Company stock heretofore taken by the Light Company on account of cash payment for license, namely, \$21,200 in stock, let the Light Company subscribe for its proportion of the proposed bonds as regards this amount of capital stock, that is to say subscribe to \$10,600 of the proposed issue of bonds, on the same terms as all other subscribers.

(3) The Light Company to release the Illuminating Company from any further liability or payment on account of the First or Twenty Eighth Districts, save and except that whenever any of the issue of bonds above referred to shall be converted into either preferred or common stock, the Light Company shall be given

1883-03-12

4

such proportion of stock, in addition to its present holding as shall make the entire amount paid to it, both in stock and in cash, equal to one quarter of the total capitalization from time to time, so that when the entire bonded indebtedness of \$800,000 shall have been issued and converted into either preferred or common stock, thereby making the then total capitalization of the Illuminating Company \$1,000,000, the Light Company shall be the possessor of \$400,000, including the money and stock already paid to it, and such additional stock as shall bring its gross amount up to the said sum of \$400,000.

March 12th. 1883.


President.

Statement Showing total amount
Expended by Property of 1st Dist N.Y. City
 to April 1st 1883.

Real Estate

66375.66

Station Structure

Foundations	2272.68	
Iron roof floor	533.	
" " Deck	519.19	
Iron Structure	8044.35	
Brackets	3470.87	
Constructing "Ramps	2223.16	
Hardware Blacksmith	931.57	
Stairs & Platforms	1320.00	
Plumbing	156.28	
Sheet Iron Wood Piping	366.25	
Pack Rails & Pack Case	10370.69	
Lumbers	1785.23	
Setting Boilers	<u>1306.03</u>	33800.60

Station Apparatus

Motors & Connections	68147.95	
Engines	14668.60	
Boilers & Fittings	24536.36	
Smoke Stacks	1625.00	
Conveyors	3178.26	
Shafting & Belting	574.97	
Labor	3730.12	
Lumbers	<u>1845.70</u>	
Tools	416.21	
Cranes	1289.13	
Pumps	171.23	
Exhaust	120.	
Foot Battery	823.66	
Iron Pipe	430.55	
Refrigerator	130.00	
Brush Sash	158.26	
Fixtures	108.71	
Miscellaneous	1127.53	
Field Regulator	1975.00	
"Balance" (#10)	<u>166.00</u>	125163.34

225339.60

Street Conductors. Continued 225 329.60

Tubes	114.193.07
Laying Tubes	15.977.22
Boxes & Joints	24 713.06
Wooden Plugs	57.97
Iron "	200.16
Balls	439.64
Caps	273.60
Lead Board	539.71
Compound	5331.36
Splicing Struts	11 237.62
Repairing "	9428.48
Payment to City	605.90 1/2
Pay Rolls & Petty Cash	9905.47

Laundries

Pack ages	19768
Tape	10850
Cup & Saucer	11.55
Test app	42.75
Embargo	715.53
Safety Calipers	75.20
Miscellaneous	<u>541.24</u> 1730.30

Tools 1016.24 198 689.80

<i>House Lamps Connected</i>	<i>Including</i>	
<i>Meters</i>	<i>Laundries</i>	11896.94
<i>Tools and Implements</i>		9401.02
<i>Office Turn & Fixtures</i>		2968.70
<i>Engineering Expenses</i>		1272.23
<i>Experimented "</i>		18519.75
<i>Paid in Stock.</i>		70257.01
		<u>1695.49</u>

// 540040 54

New York, April 2nd, 1883.

REPORT FOR THE MONTH OF MARCH, ENDING 12 M. 1st. April.OPERATING EXPENSES.CENTRAL STATION.

Salaries and Wages. \$82.00 per day.....	\$ 2,542.00
Fuel. 193 Tons Coal (2240 lbs.).....	752.70
Water. 96945 Cubic ft. at \$1.00 per M.....	96.94
Oil. Gals. Machine Drips.....	
31 Gals. Cylinder.....	31.00
Waste. 44 Lbs. at .10 cents.....	4.40
Ashes Removed. 37 Loads at .25 cents	9.25
Miscellaneous. 35 Brushes at 2.25	\$ 78.75
60 Lbs. Mercury .40	24.00
Depreciation of Tools.....	15.00
	117.75
	\$ 3,554.04

METER ROOM.

Salaries and Wages.....	\$ 248.02
Chemicals.....	15.81
Miscellaneous.....	15.00
	279.43
Forward.	\$ 3,833.47

STREET CONDUCTORS.

Forward. \$ 3,838.47

Salaries and Wages.....\$ 559.86

Miscellaneous..... 15.00

574.86

GENERAL EXPENSES.

Stationery and Printing..... 36.00

Petty Cash Account..... 68.81 104.81

RENEWALS OF LAMPS.

888 Lamps to Customers at 40 cents.....\$ 355.20

129 Lamps on Test Line at 25 cents..... 32.25 387.45

REPAIRS & RENEWALS.

A. Kings Bill of Repairs..... 7.50

Total Expense.....\$ 4,908.09RECEIPTS.

330,888 Lamp Hours of 16 Candles each a

total of 5,294,208 candles at \$1.00 per M. \$ 5,294.20

Total Expense..... 4,908.09Balance (Profit)....... \$ 396.11

Receipts per day (estimated).....	170.78
Expense per day... "	158.32
<u>Estimated Average Daily Profit.....</u>	<u>\$ 12.46</u>

Total No. of Customers connected.	307
Total No. of Lamps 4,864 16 Candles.....	}
Installed on 04 20 "	
Customers Circuit. 18 32 "	
Total No. of Lamps Installed in Station.	118
Total No. of Lamps Installed in First District....	5,064
 Total Lamp Hours of Customers.....	330,888
" " " in Station.....	46,128
Total Average of Lamps in Constant use by	}
Customers.....	
Total Average of Lamps in Constant use in Station.	62
Average life of lamps on Customers Circuit.....	372.6
Special Lamps in use in Station testing for Lamp	
Factory.....	

LAMPS BURNING.

Highest 12 M. 10th. March.	}	1,245
Lowest 5 A. M. 9th. March.		78
In Central Station.....		62

1883-04-02

4

Total Engine Hours.....	921
Coal per Lamp per Hour lbs.....	1,146

Oil per Engine per hour.

Cylinder 1.077 Gills.

Machine Drips used quite freely.

Respectfully Submitted,

(Signed) Joseph Casho.

Supt.

To C. L. Clarke,
Chief Engineer,
65 Fifth Ave.

1883-04-12

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

New York,

Apr 12th

1883

Gas jets in use between 5th & 6th Streets

Pumps

Sewing Machines

Steam Engines

Elevator

Hoisters

Gas jets low all night

Lamps

1st list 28 Dec

18073 Dec 14, 000

6 of 227 214

80 2309

129-2388 47-1443

90

742

4,000

including above 4,716

	Feb	March
Operating a/cs.		
Fuel at Stations		840.70
Oil & Waxes	103.90	31.76
Checks & Collections	163.75	232.91
Stationery & Ptg	48.75	49.60
Mech's Expenses	530.39	90.01
Gen	252.55	72.66
Labor at "Stations"	3324.27	2760.82
	3323.61	4082.46

Repairs Renewal	596.05	
Sheet Conductors	18 95	52.25
Business	25 84	102.01
Dynamies	88 58	40.47
Station apparatus	814.83	337.20
House lamps		3.91
Station Bt. Gp		120.32
Misc		
	948.20	152.21

Intal

427'81 5634.67

Being sub a considerable part of labor
was changed to Property & c/s such as
Plant Conductors & which was probably
belong to Repair & Renewal & c/s, except
a new work — Pa. May 2/83

The audit bill rendered as - -

To O'Co. 3.965.40
 Mich 2781.24

Bill Rend to date 11683.07
 Collected 6569.64

I have not included April in my data
property ops as the ranches are not yet
built. See below summary.

May 2, 1883

1883-05-23

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK.
257 PEARL STREET.New York, May 23rd 1883

Mr J A Edison

65 Fifth Avenue

Dear Sir

The bearer Mr

Lewis McKenny has been in our employ for the past five months as machinist; and has had to do a great many repairs on the Bunsen. He has also made an improvement on the burner that he wishes to show you. We tried them on Saturday last and with two running on test-line they ran 800 lights with very little spark. And the engine cord was only the same area of 600 lights with old burners under the same circumstances. If there is any thing in it I trust you will give him the credit

Yours respectfully

Joseph Basile

Form 0 28
 10-10-70

Edison Electric Illuminating Company of New York.

New York, *June 30* 188*9*

附註：

2014

1

唐氏。

Positive	_____	Ohms.
Negative	_____	_____
Total,	_____	Ohms.

L.C. Chinnoch. What do you
think of this
3000.00

Chas. S. Bradley. Inspector.

The Edison Electric Illuminating
Company of New York,
65 Fifth Avenue.

1883-07-03

New York, July 3rd 1880

J. S. Sull, Esq.
65-6th Ave

Wm. P.
Please loan me
per bearer the Pennsylvanian
RR One Pint and oblige
Yours truly

E. C. Greenfield

will return same this P.M.

1883-07-17

Mr. Hastings,

I should like to have a copy of your memorendum to Mr. Chinneck with relation to the letter received by Mr. Borden as to the down town district. You may remember my speaking to you about this.

T. A. Edison,

July 17th. 1883.

per G.

Mr. Edison

1883-07-18

Here is a copy of my
memo. to Mr. Chinnock, to-
gether with a copy of a subsequent
memo. which I think will
meet with your views. - Kindly
let me know if you approve,
as I think in so important a
matter we should be in
accord. -

Hastings

July 18/83

1883-07-11

Mr. Chinnock,

Copy
I enclose herewith a letter sent from an agent in this city to the agent of our New England Dept. which will explain itself. I think that this deserves particular attention and a careful investigation. In my mind it is not enough that our customers are satisfied; their bills for an equal amount of lighting should not be greater than gas. One of two things must be done: either they must be persuaded that they are using a greater amount of light than gas, or their bills must be reduced accordingly. If you agree with me in this matter will you kindly see these people yourself, or if you have not the time at present send some one in whom you have confidence and let me have as full a report as possible in order that I may answer this letter. Please then return the letter to me.

F. S. Hastings,

July 11th. 1883.

per Mc.G.

1883-07-17

Copy

Memo. to Mr. Chinnock:

In looking over my memo. of 11th. inst., I see that I did not clearly express myself in regard to our policy with dissatisfied customers, which has somewhat changed since last winter, and spring. I did not intend to convey the idea in so broad a sense that we are to either satisfy our customers or make a reduction in their bills, altho' I see that my memo. would imply that. What I meant was, that assuming that our meters are correct, our bills ought to be satisfactory, or if not, we should be able to satisfy the customer that the large amount of his bill is due to the fact of his using more electric light than gas. Where you are certain that this state of affairs exists, I think that Mr. Edison is of the opinion that we should cut the customer off if he will not pay his bills. I think however that before losing a large or important customer, Mr. Edison will agree with me that it would be well to have a consultation with either himself, Major Eaton or myself.

P. S. Hastings.

1883-07-22

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK.

35 N. PEARL STREET.

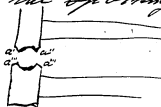
That effect was the
 consequence of the
 brush being too close to the
 commutator.

New York, July 22 1883

Mr. Thos. A. Edison

Dear Sir.

How would
 it do to take some iron from
 the pole piece on the large
 dynamo to prevent the sparking
 of the brushes? Thus.



The tips, a, a', a'', a''' appear to me from
 my understanding of the theories
 involved to short circuit a small
 portion of the magnetic field and
 to develop a tension between any
 two commutator bars as they come op-
 posite, and the being the location
 of the brushes on the commutator

Form 1

OFFICE FIRST DISTRICT.
EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK.
257 PEARL STREET.

(1883)

New York, _____ 188

produces sparking.

I think the high speed of the small machines concentrates the magnetic field, while in the large machines the pole pieces should be reduced to accomplish the same result. That the C, M, F should be developed on the commutator between the bearings of the brushes and as little as possible where they rest.

I think the new H. machine gives evidence to support these theories, although the space between the pole pieces may not be any more than the old style, still the field being so much stronger

New York, 188

concentrates a greater proportion of the magnetism upon opposite sides of the armature, and I understand it makes less spark than any yet constructed.

You may have thought of this long ago, but thinking your manifold duties might not have given you a chance I make bold to send you these suggestions

yours Resptly.

Chas. S. Bradley

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK.

PEARL STREET.

~~We understand that the~~~~the following~~~~we have~~

Id when

New York

July 29th 1883

To Mr. A. Edison Esq.,
 Dr Sir, Tell him will talk it
 over with him

Referring to our conver-
 sation of the 27th inst. about reg-
 ulating pressure on the network
 by dropping feeders, the effect of
 doing so should be introduced
 as a factor in the engine & d
 calculations.

As the feeders are a resi-
 stance in series with the lamps,
 increasing this resistance by
 dropping some of them will
 cause the "emf" of station to
 rise, and consequently just
 as much more engine work will
 be required per lamp. As that of
 800 lamps on the district give

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK.

257 PEARL STREET.

New York, _____ 188

a card of 8 inch when the station
emf. is 110 Volts and in dis-
connecting feeders we raise this emf.
to 115 Volts, the strength of current,
of course, remaining the same,
the indication of the card for the
500 lamps will be ~~the~~ greater than
before. Therefore to get real number
of lamps at this time, we should
take $\frac{115}{110}$ of card. (allowing for friction card).

Whether this number, if feeders
changed or not, the presence of
the feeders, network or in circuit
in series with all the lamps
causes the engine cards to increase
more than proportionately when the
number of lamps is increased.

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK.

257 PEARL STREET.

New York, _____ 188

Therefore I would suggest
that the constant ^{in lamps} of the engine
cards be determined by running
the engines directly on battery
of representative lamps at the
average lamp emf. (105.8), if this
has not already been done, and
then when running on district
the number of lamps be determined
by multiplying card constant by
emf. of station
105

As the strength of current is
always the same per lamp, the ammeter
on station main is not affected.

Very resp'y,
Richard R. Wheeler.

1893-08-30

D.A.E.

Some about three weeks
ago I gave orders
to clean the gland boilers and
rulers and for the last week
our men have been at it.

With so many A.I. expert
engineers connected with
the E. Light I am surprised
they should ~~show~~ how allowed
so many blunders.

I wish you would keep me
supplied with suggestions,
points, tips, as I am unable
to get any from any one else
out side of Station.

Am still on the "Rompage"

D.A.E.

Aug 30 / 93

W.A.E.

(17 August 1883)

I have noticed the
same fault with regulation
again, but his time sheet
shows his record for every
10 minute coach. He probably
takes 10 minutes ~~again~~ will
give him another change and
Mark ~~Prayer~~ ^{Prayer} has paid
his bill up to July 31st and
understands he will have
to pay by April. I am
waiting for him to return
from the Springs before I
make the change in lamp
for night
in London Ring. I will
read the Rick over to him
Aug 19th 10 A.M.
Belmont establishment

(1888-08)
one morning
I am watching and waiting
You must have the
V. 23. Engine put in order
Lime has promised to give
the matter attention

Not about increasing
capacity of station

Write me a letter asking
in strong terms to hurry up
the collection as I want to
push Randolph kindly
I am not really to do it
the other way

Can you arrange to place
for Reed Milton will
would like to be able to
call on him if necessary
\$18.00 per week

Eighty commences further
and one dollar per month

Heard it with
mistake! (1893-06)
I would rather just obtain
H. need thinks he is under
paid and acts accordingly.

Barring accidents and
with the help of G. B. and
we will show them a
trick or two yet.

Now and then a number
of A. I. Conventions and
appear to lose interest
after.

Wonder about Brown's
we want them, yesterday
3 Engines 55. Steam
all they cost as less than
3000000000

Bandy 1/1

28

C. E. Chinnock

to

J. A. Edison

Mc Dowu Iowa

Station

(Channel Central Station)

1883-09-24

At 430 P.M. this day we had a load by car of 3000 Lamps and the brushes were sparking so bad we were on the point of throwing the fifth. He had one set of new brushes - Croshawell they heated some.

I write you this for your information and as we are still adding to the installation I am inclined to the idea of another engine and too. What do you think?

W. H. H. (W. H. H.)

1883-09-27

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK.

257 PEARL STREET.

New York, Sept. 27th 1883.

S. Insul. Esq.

Or Sir

We fill your order to W. D.
Rich, Brockton, Mass.The place where we procure our
Chemicals is at Messrs. Lehn and Pink,
128 William Street.

Yours truly

R. E. Hinnoch

Sept.

1883-11-01

S. R. Fenton

per Me.G.

REC'D
NOV 7 3

OFFICE FIRST DISTRICT.

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK,
257 PEARL STREET.

1883-11-02

New York, Nov 2nd 1883.

Samuel Inull, Esq.

Dr Sir:-

The reason the Mercury was sent
in an Iron Flask was simply a matter
of convenience. Messrs. Dehn & Fink say
there is no action on the iron & guarantee
it distilled. They generally use stone jars
for 5 lbs. & small quantities. This is
the way we have been receiving it.

Yours truly
J. B. Chinnock

EDISON ELECTRIC ILLUMINATING COMPANY OF NEW YORK.

OFFICE FIRST DISTRICT. *200.446*

287 PEARL STREET.

Report for 24 hours ending at 12 Noon

November 3rd

188 *3*

ENGINES RUNNING.

Number	FROM			TO		
	h.	m.		h.	m.	
1	12	20	M	6	30	M
2	8	20	M	12	20	M
3			M			M
4	12	20	M	8	10	M
5	12	20	M	12	20	M
6	4	40	M	10	40	M
7						
8						
9						
10						

Engine Hours *48-20*

LAMP RECORD.

Total Installed, *10114* for *100423* Customers.
 Average for 24 hours *1360* Breakages *48*
 Average life *680* hours.
 Highest No. *4267* at *6* h. p. M.
 Lowest No. *421* at *4* h. p. M.
 Grand Average for *343* days, *671* days.
 Coal Received, Tons *11* Machine *46* Qts.
 Ashes Rem'd, Loads *7* Cylinder *8* "
 Water used, Cu. ft. *4000* Waste *—* Lbs.

ELECTRO-MOTIVE FORCE AT

CENTRAL STATION *1137*

Electro-Motive Force at Terminus of Feeders.

Resistance Between Underground Conductors and Earth.
 Resistance Between Underground Conductors and Earth
 Positive Pole *7.48* Ohms.

FEEDER NUMBER	E. M. F.	FEEDER NUMBER	E. M. F.	FEEDER NUMBER	E. M. F.	FEEDER NUMBER	E. M. F.
1	105.5	6	107.3	11	108.3	16	108.3
2	105.5	7	108.3	12	108.3	17	108.3
3	106.7	8	107.3	13	108.3	18	108.3
4	106.7	9	106.7	14	107.3	19	107.3
5	106.7	10	109.7	15	108.3	20	107.3

CE *106.7*

Total, *34.50* Ohms.

REMARKS: *Weather clear.*

Transferred to Reserve List - John Scott, 10 Spruce St.

TO CHAS. V. CLARKE, Esq.,

Address, City & Mosher, Printers, 20 Beekman St., N. Y.

CHIEF ENGINEER
 OFFICE

A. E. Clarke
 Sup't.

EDISON ELECTRIC ILLUMINATING COMPANY OF NEW YORK

J.B.B.

At 3 PM today 5
Engines Shop on #17 Garden
11:50 #9-10:5

At the same time discovered
a bad joint on main line
beginning from Red Hot
Reinforced for immediate repair, will
have all the joints repaired to-
morrow

Things are Booming
Looking last night for the
Bug in the engine. Perhaps
it may be in the boiler or
intermittent combustion of the
coal

I collected on Fulton St -
Aug bill \$150 - Oct \$39.98 + Credit
and yet he work be cut off

Boston Engine Co has had
20 lights bulbs from good and
from 1900 to 1905. They want to
contract with me by the year.
They offer \$7.50 a few months

I told them we cannot do it
as we would lose money

P.M. 5 Nov 10th

J.B.B.

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK,
257 PEARL STREET.

New York, Dec 14 1883.

The M^{rs}. A. Edison Construction Dept.
Lento 1-

We shipped this forenoon in
compliance with yours of the 28th to
H Ward Leonard, Jr Edison E. M. Co,
Lawrence, Mass.

25 lbs Sulphate of lime

Yours truly

J. P. Chinnock
Supt.

OFFICE FIRST DISTRICT.

EDISON ELECTRIC ILLUMINATING CO. OF NEW YORK,
257 PEARL STREET.

New York, Dec. 22, 1883.

Thos. A. Edison, Esq.

Dear Sir:-

Yours relating to Phelps
Dodge ~~has~~ (a) received.I have seen Mr. Dodge and
have arranged to give them current for
31 Lights. Have selected those that will
give us a total of about 120 Lamp-hours.Yours truly,
J. B. Chinnock

Suply

$$\begin{array}{r} 31 \\ 4 \\ \hline 24 \end{array}$$

Dr. Insull Dec. 8
I do not
recollect Maloney
the name sounds familiar
I guess will send him
to me I will let
you know all I
can about him

Tracy
Whinnery
Dec 8/83 morning

1893-12-03
Dec. 3
G.A.B. I have got
the Fulton Fish Market
interested about
Winter Game Club
4 P.M. Sunday
4 A.M. Monday
If I know to will
write a letter
free? He sent throw-
ing light away in
the morning
What do you say
G.A.B.
Dec 3^d / 83

(1883)

Total Cost of Pearl St Station ~~for~~ as installed

Real Estate building	33 187 83
4 Boilers complete, extra heavy iron	17 340 00
Boiler blast pipe	96 00
Concrete	1 166 00
Water Meter	196 00
Stack supports	935 00
2 Stacks, iron	1 050 00
Hoods etc for stacks	623 00
Stack fireproofing	530 00
Iron structure erected	3 880 00
Fire proofing between beams	533 00
Iron stairs + platform	1 250 00
Boiler blowoff	260 00
Engine for boiler blower	500 00
Dynamo blower + engine	500 00
Blower Engine shafting, belting + erection	700 00
Dynamo blast pipe	273 00
Conveyers complete erected	2 000 00
Overhead cranes	1 165 00
Steam, exhaust + water pipe system complete	5 600 00
Exhaust pipe galvanized	261 00
Exhaust head	200 00
Heater	1 200 00
Steam pumps	430 00
Inspectors	130 00
Overhauls, street cranes + tackle	500 00
Labor for erection not specified	4 000 00
Station office + mechanical outfit	1 000 00
6 Steam Dynamos	54 000 00
Electrical fittings in station complete	11 000 00
500 meters, fittings in meter room,	6 000 00
Cost underground conductors with services }	151 386 00
for 980 Consumers.	
Total cost Station	\$ 502 491 83

May (15 days) 596 lamps average for the
24 hours, which by sunset for month equals
500 lamps average for whole year.
Cost coal oil, lamps etc per year
" Labor Taxes Insurance
Depreciation on whole plant.

Total running expenses

28 800 90
35 820 80
9 741 82
74 061 82

Income \$50 X 24 X 365 = 7,008,000 at 1.2%

84 096 00

WHEREAS, the numerous poles erected in the streets of the City of New York for the support of Telegraph, telephone, electric light and other wires prove a serious impediment to travel, disfigure the streets in which they are placed, are dangerous in case of fire and seriously interfere with the proper working of the Fire Department in their efforts to extinguish and prevent the spread of conflagration, and are dangerous to life and property; and

WHEREAS, poles for the purposes described are being erected in great numbers throughout the streets of the City, and whereas little, and in many instances no revenue is paid to the City by the various companies erecting the same; therefore be it,

RESOLVED, That a Committee of Three be appointed by this Board with power to send for persons and papers, to take testimony, employ counsel and report to this Board the number of poles erected by the various telegraph, telephone, electric light and other electric companies, and each of them, throughout the streets of the City, under what authority the said poles are erected, and what Ordinances of this Board, if any, have been violated by the said companies in the erection of the said poles, and what com-

an

de

his

the

to City, and generally to enquire

and that such committee may report

such recommendation for action by

as they may deem proper.

1883. Electric Light - Edison Electric Light Company - General (D-83-027)

This folder contains correspondence and other documents relating to the business of the Edison Electric Light Company. Much of the correspondence is by Sherburne B. Eaton, president of the company. Related material can be found in the Edison Electric Light Company Bulletins (Company Records Series).

Approximately 80 percent of the documents have been filmed. The following categories of documents have not been filmed: routine intraoffice communications; routine notices for meetings of the board of directors; proxies; receipts; unsolicited inquiries concerning real estate; duplicate copies of selected documents.

1883-01-02

Mr. Edison,

Mr. Stern, your former assistant, says he has refused to take a retainer from the Brush company on storage battery.

Prof. Barker has been asked by the Brush people to take a retainer from them on storage battery. Barker thinks his general retainer to us does not cover storage batteries. He thinks however that inasmuch as he has not been employed very much by us this year, we ought to let him take a retainer from the Brush people on storage battery or else give him a considerable retainer of our own on account of storage batteries exclusively in addition to the other retainer which he now has.

On the ground that storage batteries have not heretofore formed a part of the Edison system, and that they are therefore not fairly covered by a retainer relating to matters of the Edison system.

Have you any suggestions to make?

S. B. Eaton

Jan. 2nd. 1883.

per Mc.R.

THE EDISON ELECTRIC LIGHT CO.,
65 FIFTH AVENUE.

9 1883-01
New York, January 5th, 1883

*Madame Croft Secy
Mut-Committee
Standards*

Dear Sir:-

You are invited to attend a meeting of
the General Committee on Standards, to be held at
No. 65 Fifth Avenue, on Monday evening, January 8th,
at 8 o'clock, P. M.

Yours truly,

Wm. Helleadowcroft

Secretary of the Committee.

THE EDISON ELECTRIC LIGHT CO.,
65 FIFTH AVENUE.

1883-01-06

New York

Jan 6th 1883

My dear Edison

Referring to our
talk this morning we should
have a storage battery of
sufficient capacity to operate
10 to 12 13 lamps for at least
12 hours. Will you kindly
put it in hand at once

Yours truly
C. Gould

Dear Sir,
Please reply to
this. Edison says you
know about the
disposition of the next
Engines - the 4th went
to Borden - the 5th goes
to Italy (?) - Is there any
Order for the 6th - or are
we to have it at Pearl
St?
C. N. Johnson

Mr. Wilson,

Please telephone me whether you can come here at half past eight this evening (Thursday) to talk over the wiring business, namely, the formation of a company to do wiring. It will be mainly a preliminary talk merely to shape our ideas. After that we will have another evening talk and will try to get the capitalists of the company to consent and take some interest. But I think we ought to talk the matter over and get our ideas pretty thoroughly shaped.

Mr. Johnson will speak to you about this. He says he can come if you can this evening. If you cannot come tonight can you come tomorrow night?

Please reply at once by telephone so that I can make my arrangements accordingly.

Yours faithfully,
S. B. Eaton

Jan. 11th, 1903.

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

1883-01-13
New York, Jan 3rd /83 139

My Mr Edison

What about this - Eaton says
you told him you would
come last night. I knew
nothing about it. I should
like to get this business
started before I go. If we
cannot spare the evenings
just now. What do you say
to Monday PM at 3 O'Clock
- get through by business time
- get our dinner & come
down here?

Yours
E. J.

(1883-01-15)

C. L. Clarke	10
W. L. Perry	78
R. L. Cutting	120
" " J. M. S. Perry	168
J. D. W. " Proxy	112
Saul Ince	19
Phos. A. Edison	933
E. H. Johnson	15

1455

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13,095

(3000)

ELECTRIC LIGHT STOCKS,

1883-01-20

Quotations, week ending *Jan'y 20th* 1883.

	PER SH.	LAST TRADING
Edison Electric Light Co.	325	350
" " " of Europe	—	55
" " Illuminating Co. of N. Y.	50	60
Edison Co. for Isolated Lighting	150	160
United States Electric Light Co.	129	135
Brush Electric Light Co. <i>of N.Y.</i>	100	110
Fuller Electric Light Co.	—	—
Jablochhoff Electric Light Co.	—	—

W. J.
FOSTER & SAMPSON, & Co.

Stephenson 57 CHANCERY LANE, LONDON, E.C.

Mr. Edison,

Here are my revised memoranda on the Lamp company contract and on the question of granting an exclusive license to Bergmann. These subjects will be discussed, and I hope decided at the meeting Monday night. Please look this memoranda over in advance of the meeting and bring them with you, as I think it will facilitate the dispatch of business.

S. B. Eaton

Jan'y 27th. 1883.

Per Mc.G.

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Mr. Edison,

The Light Co. was formed October 10th. At a meeting of the Trustees one of the first things considered after the formation of the Company was a contract with Fabbri & Chumcey for South and Central America and Mexico. I see by the minutes that it was referred to the Executive Committee with power on April 15th. 1879. The minutes also show that they made a report, August 21st. 1879, when the contract with Fabbri & Chumcey was made, and it appears as a part of the minutes of that meeting.

In this contract they bind themselves as follows:

- (1) To get patents and concessions:
- (2) To get the patented articles introduced as rapidly as possible.
- (3) Not to be interested in any light except the Edison.
- (4) They are to pay all commissions, cost and expenses of every nature, after letters patent shall have been granted, as well as of costs incurred for obtaining letters patent, other than the fees, costs and charges, and these the Light company are to pay, that is the Government fees.
- (5) The exclusive right to get our patents is given Fabbri & Chumcey, and this covers all renewals and extensions.
- (6) They have the right to negotiate sales, either in whole or any part of our patent interests subject to our written approval, and they hold our power of attorney, given in the contract for that purpose,
- (7) They agree to keep separate accounts of our matters and to render prompt returns on all moneys received.
- (8) The Light Co. agrees to pay Fabbri & Chumcey, out of money they get from Fabbri & Chumcey's territory one third of the net proceeds coming to the Light Co., after deducting amounts paid by the Company for government fees, and all other

1883-01-29

expenses paid by the Company in the same connection.

The above is the contract with Pabbri & Chaupcey. We
are tied up by it, nolens volens.

S. B. Eaton

Jan. 29th. 1883.

per Mc.G.

1883-01 [?]

Mr. Edison -

Have called bycc. Comtee
meeting for tomorrow,

Sat. at 1 P.M. at

D. M. & Co. - Langley

Suggests that you be
there to explain the
necessity for the Light
Co. assuming the expense
Friday Ep

1883-02-01

New York, Feb. 1st. 1883.

65 Fifth Ave.

Major S. R. Eaton, President.

Sir:-

Since all our efforts to obtain a more satisfactory definition of our relations as manufacturers with our other interests as purveyors of light and power seem to breed nothing but hostility and suspicion on the part of those gentlemen who represent the latter, they apparently being wholly unable to see anything in our actions but an ulterior design upon them, we beg leave hereby to withdraw from any and all further controversy or discussion in respect thereto.

In doing this we beg leave to call your attention to a few facts:

1st. Ere embarking in our various enterprizes we sought in a most determined way to induce our friends in the parent company, as well as others to join us in the undertaking. In this we signally failed. We thereupon determined upon taking all the risks and carrying the burden ourselves to the best of our ability- more with an object to make the Edison electric light a success than to make money by manufacturing. This is especially true in respect to the business of the Goerck street and Bergmann and Co's factories.

2nd. These factories having necessarily attained a stage of activity prior to the Light Co. proper - the impression has grown that in our factories we have the larger proportion

1883-02-01.

2

of the profitable business of the system. This is perhaps but natural, but is none the less erroneous. The practical effect is however to place us in a false position. If the Board, or any committee appointed by it, would give sufficient time and attention to this subject to thoroughly master its various bearings, we are of the opinion that they would agree with us that in our propositions we are actually sacrificing something rather than grasping for more. We simply desire to make safe the capital we have invested and were ready to make some present sacrifices to that end. One thing is certain that in the future should the absence of a contract with the various factories work an injury to the Electric Light Company, they can depend upon us at any future time to make just and equitable arrangements.

3rd. As parties interested in the success of the system as a whole, we are most anxious that no deterioration of the character of the work shall occur and that no benefit of our experience shall become available to other than the Edison system. This can in our judgment be accomplished only by keeping the manufacture, at least for some time to come, in present hands, i, e, the hands of parties vitally interested in the Edison system.

The expression given vent by one of the Directors of our Company to the effect that "they should like to feel that Mr. Edison's interests were identical with theirs and not antagonistic" does not only him, but the rest of us great injustice. Besides, unless the Edison system becomes an absolute and un-

1883-02-01

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qualified success, the business of manufacturing for that system will not be worth an effort to maintain it. That we hold to the opposite view is evidenced by the fact that we have ourselves invested more money in our various factories than has as yet been put into the business of developing the system in other directions. We have not invested this money for to-day nor yet for to-morrow, but for the future.

As we believe in the future and have confidence in our own ability to maintain our lead in the manufacturing business and as we do not wish to foster the suspicions which are already too apparent, we repeat, we are content to allow matters to remain as they are.

Very truly yours,

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1883-02-01

May 15th Feb'y 1/83
 Major J. B. Eaton
 President

Sir: Since all our efforts to
 obtain a more satisfactory
 definition of our relations as
 manufacturers with our other
 interests as purveyors of light
 & power seem to breed nothing
 but hostility and suspicion
 on the part of those gentlemen
 who represent the latter, they
 apparently being wholly unable to
 see anything in our actions
 but an ulterior design upon
 them. We beg leave hereby to
 withdraw from any & all further
 controversy or discussion in
 respect thereto.

In doing this we beg leave to
 call your attention to a few facts.

1st In embarking in ~~these~~ our
 various manufacturing enterprises
 we sought in a most determined
 way to induce our friends in
 the Parent Co - as well as others,

1883-02-01

2

to join us in the undertakings
 in this we signally failed - We
 thereupon determined upon taking
 all the Risks & carrying the
 burden ourselves to the best of
 our ability - this is especially true
 in respect to the business of the
 Gossett & and Bergmann & Co
 Factories -

3rd These factories ^{having} necessarily
 attained a stage of activity
 prior to the Light Company
 proper - the impression has
 grown that in our Factories
 we have the larger proportion
 of the profitable business of
 the system - this is perhaps but
 natural, but is none the less
 erroneous - the practical effect
 is however to place us in a
 false position - We desire
 a right to secure to ourselves in
 the future the benefits of the
 labor of the past - We do not
 think the E & L Co should arbitrarily
 take these from us and pass
 them over without consideration

1883-02-01

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~~to the very people who declined
to join us in the earlier stages
of our work -~~

3rd As parties interested in the
success of the system as a
whole we are most anxious
that no deterioration of the
character of the work shall
occur and that no benefit
of our experience shall become
available to other than the
Edison System - this can in
our judgment be accomplished
only by keeping the manufacture
- at least for some time to come -
in present hands & in the
hands of parties still interested
in the Edison System -

The expression given vent by one
of the Directors of our Company
to the effect that they should like
to feel that Mr Edison's interests
were identical with their & not
'Antagonistic' does not only him, but
the rest of us great injustice
- besides unless the Edison System

1883-02-01

4

becomes an absolute & unqualified
 success the business of
 manufacturing for that system
 will not be worth an effort
 to maintain it - that we
 hold to the opposite view is
 evidenced by the fact that we
 have ourselves invested more
 money in our various factories
 than has as yet been put
 into the business of developing
 the system in other directions
 We have not invested this money
 for today nor yet for tomorrow
 - but for the future -
 As we believe in the future
 & have confidence in our
 own ability to maintain our
 lead in the manufacturing
 business & as we do not
 wish to foster the suspicions
 which are already too apparent
 we repeat, we are content
 to allow matters remain
 as they are.

Very Truly Yours

Thomas A Edison
 Edwin H Johnson T. R. M. P. M.
~~K. J. M.~~

1883-02-01

If the Board or any Committee
 Appointed by it. Would give
 sufficient time & attention to
 this subject to thoroughly
 master its various bearings
 we are of the Opinion that
 they would agree with us
 that in our propositions
 we are actually sacrificing
 something rather than grasping
 for more - we simply desire
 to make safe the capital ~~we~~
~~have invested~~ & were
 ready to make some present
 sacrifices ~~to that end~~
^{one thing is certain, that}
~~and~~ in the future should the abuse of a contract
 with the various factories work an injury to the
 electric light, they can depend upon
 us to ^{make} ~~make~~ just and equitable arrangements
 with it ~~to be for the benefit of the city~~

1883-02-01

Mr. Edison,

The United States Co. have purchased the iron building on the north side of Liberty street a few doors west of Nassau street for offices for their parent company, Ill. Co. &c.

It is a large double iron building say 5 stories high. They told me yesterday, at the crane Company, that they seriously thought of moving up to Union Square, but that they had finally decided to stay near Wall street.

S. R. Eaton

Feb. 1st, 1883.

per Mc.G.

1883-02-02

Mr. Edison,

Here is a minute of the things to be done at the
Director's meeting to-day. You see there is a good deal of un-
finished business on hand.

S. B. Eaton

Feb. and. 1883.

per Mc.C.

1883-03-31

President's memorandum of items of business for Ex.
ecutive Committee of Light Company, Friday, February 2nd. 1883.

(1) Reconsider the acceptance of resignation of
Col. Goddard, for the purpose of allowing his name to stand as
Secretary until the stock certificates he has signed, now deposited
at the Trust Company, shall have been exhausted.

(2) Obtain approval of proposed contract with
Colorado Co. for the State of Colorado.

(3) Rhode Island Co. for that State. Make a
report to the Executive Committee of the result of several con-
ferences with Gov. Howard and ask for approval of proposed plan
for Rhode Island.

(4) Contract with Watertown syndicate for coun-
ties in Northern New York.

(5) Proposed Company for State of South Carolina.
State result of conferences with Dr. Moses, and ask for approval
of proposed plan for this Company.

(6) Shall we consent to have the Swan Company
join the Grange Association?

(7) Decide the question of going on with the proposed consolidated Company for Canada, to be brought out in London by Mr. Montgomery.

(8) Shall we send representatives from our company to inspect the Brush Storage battery? Present Mr. Edison's views on this subject.

(9) Shall we join the friends of Mr. Field, in bringing out an electric railway company? Report the result of two interviews with Mr. Reed.

(10) Report upon delay by Stock Exchange about deciding whether to adopt the Edison light.

(11) Report about interview with Mr. Green touching the formation of Louisville company and ask to have the matter decided by Executive Committee.

(12) Report refusal of English Edison Company to continue paying for renewals on certain Edison patents in England. State the effect the same may have upon our patents.

(13) The possible effect upon our United States patents of the recent decision of Judge Nixon in the case of the

1883-04-21

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Bate Refrigerating Co., setting aside a prior decision of Commissioner Paine, in the case of Ex parte Mann, and holding that the life of a foreign patent determines the life of the American patent, and notwithstanding the application of the American patent may have been filed anterior to the granting of the foreign patent.

(14) Our contract with Mr. Spencer Borden. He is dissatisfied with the recent action of the Board, and claims that he is entitled to have the contract made for five years.

(15) Discuss the question of what shall be the policy of the Illuminating Co., as regards compelling customers in the First District to pay the expense of wiring.

EDISON ELECTRIC LIGHT CO.
175 N. AVENUE.

28
1883-02-03
New York, February 3rd, 1883

Meadowcroft

Dear Sir:-

I beg to inform you that no meeting of
the Committee on Standards will be held on Monday
night.

Due notice will be sent you when the next
meeting is to be held.

Yours truly,

W H Meadowcroft

Secy of Committee.

Form No. 41

1883-02-18

NIGHT MESSAGE.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages and communications with the liability, which have been assumed by the master of the telegraphic message. Errors can be avoided against only by repeating a message and by sending it again for comparison, and not especially when the message is long or complex. The sender or delivery of Unrepeated Night Messages, with a request for a copy, and a copy of the message, will be sent again for copy or delay in the case of any error in writing, except those due to the fault of the sender. This is an UNREPEATED NIGHT MESSAGE, and is subject to the same conditions as the above.

THOS. T. ECKERT, General Manager

NORVIN GREEN, President.

NUMBER	SENT BY	RECEIVED BY	CHARGE
0285	B	PH	19 Paid m

Received at the WESTERN UNION BUILDING, 186 Broadway, New York.

Feb 18 1883

Dated Oroville Cal 17

To D Insull

65 Fifth ave NY

Why in hades dont you send Lou
giving Chi Electric bulletins which
you promised attend at once
bless you

Frank McLaughlin

Mr. Edison,

I spent Wednesday in Boston. Mr. Higginson says he cannot bring out our company because the United States Co. are not willing that he should do so, and he feels that his first obligation is due to them. Mr. Borden and Mr. Garrison have secured \$340,000 signatures to the company, and they have at least \$60,000 more ready to be put down as soon as the parties who are to sign return from temporary absences. I saw Mr. Endicott. He says that his firm will probably subscribe \$25,000, but he is not willing to have it done in his own name. He says that whenever he puts his name to a company, widows and orphans follow his lead, and he does not think that a new business like that of electric lighting is to be recommended to people of small means, who require immediate and uninterrupted dividends. He is very firm in his decision not to subscribe in his own name. Mr. Garrison and I saw him together, and we both agreed that there would be no use in trying to induce Mr. Endicott to change his mind in that regard. The subscription paper will be taken about privately for the remainder of this week, also Monday, and I shall visit Boston again by Tuesday, when we will see how matters then stand and decide what next step to take. Both Mr. Garrison and Mr. Borden feel that they would like two or three days more to see if they can get all the subscriptions without placing the matter in the hands of a banker. Gov. Rice is very friendly and has partially promised them a large number of subscriptions. I talked with Mr. Endicott and Mr. Foster about allowing Gov.

Rice to become prominent in the matter. They both speak well of him. Mr. Endicott said that Gov. Rice would do us no discredit and might be of very great use to us as a conspicuous member of the company. He referred especially to the fact that the Gov. has a great many friends who are strong financially, also to the fact that he understands both municipal and State matters thoroughly, so that rights of way &c. could be easily obtained through the Gov's influence. The depressed condition of the stock market was operating somewhat against our enterprise, also the low price of the stock of the Edison Ill. Co. of N. Y., also the fact that the United States Electric Lighting Co., which Mr. Higginson brought out in Boston, has not proved successful. But there is no reason to believe our enterprise will not succeed.

Let me add that I think no mistake has been made thus far, and that the outlook is good.

S. B. Eaton

Feb. 23rd. 1893,

per H.C.C.

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-02-27.

New York,

July 27 1883

S. Insull Esq
President.

Dear Sir,

The following is list of dfts
by Edison Lamp Co. payable through
Edison Co. not held by us

for Lamp	J. A. Edison	Nov. 10	46.00
" advance	E. St. Johnson	Jan 31	3.50
" Lamp	Edison	March Works Jan 31	70.00
" advance	"	"	10.00

I am particularly anxious
to balance up the Lamp Co and Light
Co. up to 1st March - so as to get
a clean start from that time and
if you can manage in some way
to have all of above put through I
would be very glad indeed.

I enclose bills of E. St. Johnson and
March Wks for the advances of Edison Lamp

Yours very truly

THE EDISON ELECTRIC LIGHT CO.

S. Allen

1883-03-02

Mr. Edison,

The New York Times will pay their wiring bill to-day, which closes up all their matter. They refuse to pay our 20 per cent addition on wiring so we had to take it off. The meter bill has not been presented to the New York Times and after will not be until Monday night.

As to whether the temperature regulator was on the customer's side or not, that has been fully tested both ways as I understand it. *But understand this answer*

The Naval Office has been pigeon holed at Washington. Benton is looking after it. The Atlantic Ins. Co., corner William and Wall streets, have accepted the estimates for wiring but not for fixtures as yet. I believe they are now waiting for Bergmann & Co's figures for fixtures. *they must use temporary ones* Kidder, Peabody & Co. have accepted figures and we shall begin to wire them next Monday. Greenfield will see how we can see George William Ballou. Also Foote & Hatch. He says the tube is big enough. Regarding the Stock Exchange, Hastings says he has called upon Mr. Drake G times but has not seen him and now has an appointment to meet him this afternoon. Regarding going along Wall Street and Nassau street in the day time Greenfield's man has already done that and is trying to get those who burn all day lights on both sides of the streets. Regarding Fulton Market, we are going to light Eugene Blackford's place which is outside of the market. We will move back into the market as soon as the market is done. If

It is not on our side.

I think they want to know just

1883-03-02

2

our light suits Blackford we shall get most of the market. We have been obliged to wire Blackford's temporary place under one of the old contracts for wiring, compelling him to pay for wiring if he takes the light. We can wire his new place in the market, under the same contract. But if he likes the light in his temporary place he may pay for the wiring. Greenfield is trying to get the whole of Pulton Market. Regarding lighting the Elevated Railway Depot at Pulton street, I wrote Callaway some two weeks ago. He said we could light the depot if we would do it entirely at our own expense, but that they would not pay for wiring and fixtures. It will cost us nearly \$200 to equip the depot with wire and fixtures. (I think we had better do it. *Don't do it*) We have not tried to get the Sub-Treasury, because it is said that all these Government Buildings on Wall street depend upon the decision in the case of the Naval Office. I do not think sufficient meter records have been obtained yet so as to ascertain the correctness of the indicator cards, but will make other inquiries about that. We arranged the Drexel, Morgan matter by having a count made of the lamp hours for 5 days and a meter taken put in and taken out. The count ended on yesterday morning. I have just received the cards of lamp hours from Drexel, Morgan's and am waiting for the meter reading. *c*

Benton has just been in and says that the Secty. of the Treasury has asked Congress for an appropriation to experiment at

1883-03-02

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Willet's Point on the different kinds of electric lighting for the purpose of finding out which is the best for Government use.

Whether this relates simply to the Tower for arc lights or whether it relates to all kinds of electric lighting I am not sure. We will look into this and find out just how it stands.

Regarding the Bijou Theatre, they paid their last bill for the month of January, and we are expecting their bill for the month of February now. Borden is very much behind with his accounts. For instance he has not sent his monthly statement for the month of January yet. Without that we cannot tell whether there is a profit or not on the Bijou running. Mr. Hutchinson is doing all he can to have Borden get his monthly reports out more promptly and I have had a talk with both Borden and Dwelley about it. They say that if they once get caught up they will be all right.

S. B. Eaton

March 2nd, 1883.

per Mc.G.

1883-03-07

Mr. Edison,

Can you suggest anyway to reduce the stock that is being carried by the Supply Department at Pearl street? Very little of it is being consumed. I wish we could turn it into money even at a loss. What are your views?

S. B. Eaton

March 7th. 1883.

per H.C.G.

M.

PENNSYLVANIA RAILROAD COMPANY.

MOTIVE POWER DEPARTMENT

D 1883
Oct. 24.

Subject: Electric Light Bulletin

Atlanta, Ga 9/22 1883

Thos. A. Edison

#65

Dear Sir -

Could you kindly send me a complete set of the Bulletins of the Edison Electric Light Company. I am quite anxious to keep posted on every ^{thing} connected with electric lighting and regard these Bulletins, as one source of information. Also, if it would be proper, I would like to have the Bulletin sent me, as it is issued.

By so doing you will greatly oblige.

Very truly yours,

Chas. B. Dudley
Chemist

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

New York,

38/883-04-05

April 5 1888

Wm. Allen

Result by
Present
Dear Sir

There are 73
shares of Light Street
standing in name of
B. Batchelor on which is
due the recent 50% call
and also the previous call
of 10%. Has Mr. Edison
not got a P/O for the
transaction of his business
and what is the prospect of
our receiving a check for
the installment due?
Please let me know
Yours truly

Truly yours
Wm. Allen

1883-05-03

The Edison Electric Light Company

65 Fifth Avenue

S. B. Eaton Pres
E. H. Johnson Vice-Pres
E. P. Fahnestock Treas
C. Goddard Sec'y

New York May 3rd. 1883

T. A. Edison, Esq.

City.

Dear Sir:-

I beg to hand you herewith two plans of Evansville,
one electrical and one dotted, together with two printed sheets
of data, being all that the engineering department has been able
to obtain in the way of data. These documents have this moment
been received by me from Mr. Clarke and I at once hand them to
you for your estimate.

Very truly yours,



President.

American Rapid Telegraph Co.,

187 BROADWAY.

RECEIVED
MAY 19 1883
ANSWERED

Office of
L. A. SHERMAN,
General Mgr.

New York,

May 17th,

FILE No.

D 1883

El. St.

Thos. A. Edison, Esq.,

Dear Sir:-

I understand that you are issuing some bulletins full of information in regard to the progress of your light. Could you favor me with them? I would like to comprehend in a measure the astonishing progress you have made in this world since you and I were together in Boston.

With my regards to your private Secretary, Mr. Griffin,
I remain,

Yours very truly,

L. A. Sherman

Send Bullets

18
May 11 1883

Mr. Griffin

1883-05-28

Carlbad, May 28/83

My dear Edison.

I reached here on my return from Geneva Sat. day evening and found your Cable, repeated from Paris, which had been received here a few hours before my arrival.

I could not reply immediately because I was wholly unprepared for any such proposition and, though greatly pleased and flattered, I felt the necessity for a little time for reflection. I therefore deferred reply till this (Monday) morning when I cabled you as follows "If all interests desire, should be favorably disposed, I write fully."

You will doubtless think when this reaches you that it is not as definite and decided an answer as your question seemed to require, but you will at once understand that it would be unwise for either of us to commit ourselves definitely in so important a matter without a fuller understanding than can be arrived at through a brief Cable correspondence.

Before I could agree to assume so responsible and important a position I desire to be assured that the wish so kindly expressed by you is shared by others

1883-05-28

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for as I would certainly decline to take the direction of the Company without your hearty concurrence, I should also be unwilling to do so unless assured of the support of those representing what I may call the Commercial interest. In other words, I should be unwilling to be the representative of a faction, for I feel that to ensure the greatest measure of success whoever is at the head of the Company should have the confidence and support of all parties.

I have thought too that you ought to understand fully the views which I have always held and still adhere to in respect to what should be the general policy of the Company. I have not hesitated heretofore in expressing these views whenever occasion has occurred, but think they should be briefly stated now as a preliminary to any further discussion of your proposition.

I have always deplored the circumstances which placed you in double and somewhat antagonistic relations to the Company, for it not only divides your pecuniary interests, but loads you with responsibilities and anxieties which cannot fail to be detrimental to the true interests

1883-05-28

3. of the Company. Aside from this, as you know, I have always thought the Company should itself manufacture all articles which could not be procured in open market or by competitive bids, and while circumstances have seemed to render this impossible, I am strongly opposed to diverting anything more of this nature into the hands of other organizations. For this reason I was opposed to the scheme for an installation Company which was broached just about the time I left, for if that were carried out the Solated Company would simply become an organization for soliciting & securing orders to be turned over for execution to the Installation Company, while the Solated Co. would take the risk and be responsible for the work. I should keep as much of the practical work of installation as possible in the hands of the Company and should favor every measure which would bring the manufacturing within its control.

As far as my observation has gone the most successful patents have been those where the parties owning them have established the manufacture of the patented article by their own capital.

1893-05-28

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Under their own direction & control, acquiring in many cases such facilities that they have been able to compete with later patents of perhaps equal value & even to retain their business after the patents have ceased to protect. This should I think be the policy of the Edison Companies, and to that end they should retain what they have left and enter into no contracts which will prevent them from regaining as fast as possible what they have heretofore allowed to pass out of their hands.

I have no information as to the present condition or future prospects of the Company, but do not imagine there can have been any material change since I left. Unless matters are very much worse than at that time and if it is the wish of all parties, I would be willing to agree to return to New York in August and be ready to recommence my labors by September 1st.

I thought when I left New York that I should never again take an official position in any Corporation, preferring rather to occupy my time in something less wearing, where if there were not so much glory to be won there would be less anxiety and where any lack of success would be less conspicuous.

1813-05-28

5. Even now, I think I should be quite as well satisfied if after reflection you should change your views. Still if you really think you need me I shall come and devote myself heartily to the work. Moores cable reached me this afternoon. please thank him for it.

Yours truly
C. Goddard

I wrote you on Wednesday from Zurich about Davis affairs. I shall probably go to Vienna next week to meet Riedemann & Turattini & hope something may grow out of our visit, though I count upon nothing until I have seen the Vienna people. The favorable feature is that they have sought us not we them.

1883-06-02 41

The Edison Electric Light Company,
65 Fifth Avenue.

New York, June 2nd, 1883

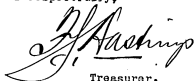
T. A. Edison, Esq.

City.

Dear Sir:-

In leaving our office in a hurry this afternoon, Mr. Lowrey requested me to ask you if you will kindly arrange to dine with him in town Tuesday evening next, to meet Messrs. Eaton, Fab-bri, and Wright for the purpose of discussing some matters which he will state to you at that time. Mr. Lowrey will I presume in-form you Monday as to the place and hour of meeting.

Yours respectfully,


Treasurer.

Mr. Edison,

1893-06-18

I do not like the use of this word, Sole on this card.

Do you. I do not think it looks well and I fear it is likely to
provoke unfavorable criticism

S. B. Eaton

June 15th. 1893.

per Mc.G.

G.

How would word License
infer to -

Good

June 18, E P

1883 - 06-15

(Mr. Edison)

President's memo. of business for Executive Committee
meeting of Light Company, at one P. M. Friday, June 15th. 1883,
At office of D. H. & Co.

(1) ARGENTINE CO. Mr. Edison is in favor of developp
ing the business in the Argentine Republic by means of a New York
City company already formed for that purpose, but Messrs Fabbri
& Chauncey do not approve of the terms proposed to be paid by said
company for a liconse. See Messrs Fabbri & Chauncey's letter of
June 8th., discussing the matter. Mr. Edison will explain the
matter in person.

(2) PROPOSED NEW JERSEY CO. The proposed contract
with the N. J. Co. provided that it shall make us a cash payment
of \$10,000, in addition to certain other compensation. They ob-
ject to pay this amount in cash, and have notified us that rather
than pay it they will probably abandon the proposed business.
Shall we insist upon this cash payment?

(3) THE FRENCH PATENTS ON COMPENSATING CONDUCTORS.
The action of Mr. Batchelor in filing Edison's applications for
French patents, without waiting for instructions from here, will
result in shortening the life of the American patent by two years.
Mr. Edison states that Mr. Batchelor was obliged to do this in
order to get the patent filed in advance of competitors. The Ed-
ght Co. has no interest in the French patents, although Mr. Edi-

son and certain others have. It is now too late to correct this action of Mr. Hatchelor even if we desire to, but I bring it to the attention of the Board chiefly in order that it may appear in the records.

(4) GRAMME CO. ASSESSMENT. The Special Committee on Finance of the Gramme Co. has passed the following resolution, a copy of which has been sent to each of the seven electric light companies composing the Gramme organization. Each company, including ourselves, is asked to pay \$1,000 cash, besides two monthly assessments hereafter. Will our Company consent to do this, provided the other six companies consent? The resolution is as follows:

"RESOLVED," That this Committee recommends to the several companies constituting the Gramme Electrical Company, the immediate payment of \$1,000 each to liquidate the present indebtedness, and that the monthly advance of \$100.00 from each company be increased to \$200."

(5) ELECTRIC RAILWAY CO(a) The consent of our Company is asked to the sale of not to exceed \$250,000 of stock in the treasury of the Railway Co., at 50 cents on the dollar, to raise money now needed. The Field interest has given their consent. Do we consent?

(b) The Field interest request that Mr. Cyrus W. Field be made a director of the Electric Railway Co. in place of Mr.

Deyo, who is one of their directors but will resign to make a place for Mr. Field. Shall we assent?

(c) It is suggested that both the Field interest and the Edison interest should make a present of \$5,000 of stock fully paid to each of their directors. If this arrangement is carried out, Mr. Gallaway and Mr. Kennedy, our two directors, will be entitled to \$5,000 of stock, each, out of the Stock coming to the Edison Electric Light Co. Shall it be done?

(6) COMMISSIONS TO AGENTS. Authority has heretofore been given the President to allow a commission not to exceed 15 per centum of the amount payable to the Light Co., to agents working up companies with overground conductors. It seems desirable to allow the same commission also in the case of companies with underground conductors. Shall the authority heretofore given the President be thus extended?

(7) FINANCES. The following figures are taken from my report on the financial condition, made to the Executive Committee, June 6th.:

(a) ILLUMINATING CO. The requirements of this Company are as follows:-

Accounts payable	\$21,092.04
Money borrowed from Light Co.	25,980.89
Future Wiring	10,000.00
Running expenses	2,200.00
Broadway mains & additional plant	<u>25,000.00</u>
Total	84,872.93

I believe the Illuminating Co. has but three sources of

income. The first is from delinquents who have not paid all their installments, notably Mr. Edison, who is behind to the amount of \$32,520 (Mr. Edison will state his reasons for not responding) The next is an alleged claim against the Light Co. for experimental work, based on the theory that whereas the Light Co. contracted to give the Illuminating Co. a perfected system of lighting it did not do so but caused the Illuminating Company itself to expend money on experimental work. Views differ as to the merits of this claim and as to how much it amounts to in money? The third source of income is in another claim against the Light Co. for a return of say 10 per centum of the amount (35 per cent) paid for license. The full per centum called for by the contract is \$350,000. The amount already paid is \$334,900.00, of which \$271,200 has been paid in stock and \$63,700.00 in cash, leaving \$15,039.34 still payable.

Can the last two above sources of income be availed of to raise money required? If not, shall a meeting of the Directors of the Illuminating Company be called to see what shall be done?

(b) ISOLATED CO. Shall this company declare a semi-annual dividend of say 5 per cent, July 18th.? The dividend would be distributed about as follows:

Light Co.	\$19,125
Other stockholders	18,375
Total	37,500

Can the Isolated Co. spare even say \$18,375 for dividends now? Suppose the Light Co. were to pay its debts of \$32,073.00

1883-06-15

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to the Isolated Co. could the latter then spare money for a dividend? The busy season of the Isolated Co. is just opening, and the company not only cannot spare money but needs more capital for business than it now possesses. Shall the Isolated Co. call in additional installments on the 50 per centum unpaid? In my opinion that will have to be done before September 1st., if we desire to handle all the orders and do all the business that will come to us.

(c) LIGHT CO. I explained in my report of June 6th. (No. 1.) that if the Light Co. calls in the remaining 20 per cent unpaid installments on stock, it will realize about \$21,148, and possibly \$4,500 additional. Should this be called in? Will it meet present obligations and provide for the future? It will not pay in full the debt to the Isolated Co., which is \$32,073.96. Nor will it provide money for current expenses. The business of the Light Co. (the installing of central station plants both aerial and underground) is developing rapidly. Contracts for four cities (Shamokin, Sunbury, Brockton and Lawrence) have been already executed; estimates are finished and contracts are likely to be made with three more cities (St. Louis, Danville, and Lowell). The cash cost of these seven plants will be about \$225,000, and the cash payments, to the Light Co., will aggregate say \$15,000. Besides the above we are now making estimates on 13 other places, namely, Utica, Erie, Portland, Charleston, Fall River, Auburn, Haverhill, Lockport, Syracuse, Ronova, Williamsburg, Louisville and Hartford, with a fair prospect of getting contracts

1883-06-15

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from local companies for most of these places. Besides, we are arranging to make canvasses and estimates in 10 other places, making 30 cities and towns where central station plants may possibly be installed this year.

From the prospects of receipts for licenses from these companies, it would seem that if the Light Co. were to call in its remaining 20 per centum ~~on~~ stock, and were also to secure by loan or otherwise say \$25,000 more, it would be able to take care of itself for months to come, besides paying its debt to the Isolated Co.

J. M. [Signature]
P. W.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on routes of lines and its facilities which have been granted to it by the order of the following message. Errors can be guarded against only by repeating a message back to the sending station or company, and the company will not hold itself responsible for errors or delay in transmission or delivery of Unrepeated Messages, beyond the amount of time paid thereon, nor in any case where the claim is not presented in writing within early the next evening thereafter.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions stated above.

THOS. T. ROBERTS, General Manager.

JOSEPH C. STICKNEY, President.

RECEIVED	SENT BY	RECD BY	DATE	TIME
W 258 96	H D	mb	17	11-56 am

Received at Cox, LaSalle & Washington Streets, CHICAGO, Ill.

June 18 1888

From New York - 18
 To J. A. Edison or Geo. H. Bliss
 51 Wabash Ave. Chgo

Mornings: sun rays many bridges
 lamps dim or only red and
 the whole thing only faint twilight

J. B. Elton

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which are set forth in the tariff of the Western Union Telegraph Company. Errors can be granted against only by sending a money back to the sending station for correction, and the sender is liable for the cost of the message for errors or delay in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, not to exceed where the message is sent by day, the amount of tolls within sixty days. This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions of the tariff of the Western Union Telegraph Company. THOS. T. ROCKWELL, General Manager.

NUMBER	SENT BY	RECD BY	CHRGY
44518	ML	MS	29 paid

Received at Cor. Basalle & Washington Streets, CHICAGO, Ill.

Dated

New York - 19

To

J. A. Edison Western Edison Light Co,
51 Wabashi Ave. Chgo.

Underwriters meet tomorrow morning & will discuss accident Osborn will file report they request written report from us I think Clarke should make it adopting generally Osbornes explanation answer J. B. Eaton

1/ S. B. Eaton
June 29 - 1883

June 1883
Adopted
June 1883

Thomas Permon
London, Eng.

Butane is not (over)

Those photos may very well be
signed & sent to Mother

BPI

[TO JOSEPH HUTCHINSON?]

1893-06-22.

Mr. Hutchinson,

Will you please see that the Bulletins asked for
in the enclosed letter are sent to Mr. McIlwain, and also that
your agent looks after him with reference to putting the lights in
his shops. The gentleman who writes to us about this matter is
the President of our Shamoon Co. Please return the letter
annexed.

June 24/93
JH

S. S. S. S.

J. E. BROWNE & CO.
62 BROADWAY, (Room 11)
BROKERS IN ELECTRICAL STOCKS, BONDS, PATENTS, AND
SUPPLIES OF EVERY DESCRIPTION.
Correspondence solicited and Electrical Information
obtained.

1883-06-25

New York, June 25 - 1883

T. A. Edison Esq
Sir

I enclose you
an extract from *Le Terre Haute*
daily Newspaper. I have many
relatives & friends there who tell
me that the people are dissatisfied
with their gas Co & do not like
the Brush system. I think that
a good Incandescent Co can
be organized there.

I think that I can make
more money upon the terms
you spoke of today than I
can in my present business.

You have never yet given
me a chance to do anything
with your light or make any
money. If you are willing to

give me such a chance &
(which I think I merit at your
hands) I will close up my
present business as soon as
possible & go to work for you
Co. I should prefer near by
territory & will come to see
you next week as you request.

The terms that you spoke of
will be very satisfactory to me
viz One hundred dollars per
month & a Commission of ten
per cent. As my time is
money to me I hope that
you will give me a definite
answer as to arrangements
to be made if any.

Yours

James E Brown

P.S.

Can you drop me a line
as to what time next week
would be most convenient.

JEB

THE BROWN & CO

1883-06-27

Mr. Insull
What shall
I say to this?
JH

26

1883-06-27

June 27/83
 Lehas. F. Richard
 son.
 enclose time table
 & makes inquiries
 about the purchase
 of tickets

Freshford, N. J., June 27th, 1883

Mr. P. S. Hastings,

Secy. Edison Electric Light Co.

Dear Sir:

Please accept my
 thanks for your kindness in send-
 ing to Mr. Doots for me, the package
 of documents relating to the Edison
 Light, which came safely to hand
 to night. I shall lose no time
 in acquainting myself with
 their contents.

While in Mr. Edison's room,
 yesterday, he asked me the
 place of my residence, the time
 I could reach the office in the
 morning as well as the last train
 bringing me home at night.
 Upon his receiving the desired
 information as well as the Com=

[ENCLOSURE]

mutation rates between
Freehold and New York, he
kindly said, "I guess we will
have to give you your com-
mutation ticket also." As the
rates, I believe, are \$25.00 monthly,
or \$125.00 for the set of twelve
tickets, I write to ask what action
I shall take in the matter before
Monday, whether I shall order
the tickets, or if the Company
prefers to procure them. I know
it is a very delicate matter to
mention but as simple ex-
cursion fares are \$1.75, the dif-
ference is considerable.

Trusting you will not find
your confidence in me misplaced
and that I may be able to be on
time for duty on Monday.

Very Respectfully yours
Thos. F. Richardson

1883-06-27

LAW OFFICES OF
ECCLESINE & TOMLINSON,
32 PARK PLACE,

THOS. G. E. ECCLESINE
JOHN C. TOMLINSON.

NEW YORK, June 27th 1883

James A. Russell, Esq.

Dear Sir:

We have ascertained
from reliable sources the following
facts in regard to the United States
Illuminating Company:

(1) The Illuminating Company obtained
through certain political influences a
contract for lighting the Brooklyn
Bridge, and at a cost of
Thousand Dollars.

The lights when put in place
burned - and the United States Electric
Company, who had taken
the contract away from the Illuminating
Company, were carrying it out.
This the Ill. Co. for the
the continued operation of the
an altercation the
the Bridge

The lights are working very poorly
not giving satisfaction

The Brush Company have placed a number of lamps near the Brooklyn side of the bridge, which being supplied by a powerful engine gave a very bright & steady light, this contrast to the dim & uncertain lights of the U.S. Co. appeared to great advantage

(2) The Coney Island plant of the U.S. Oil Co. has proved an utter failure.

They made a contract with one Beum to light his place upon the Island last season, and at a cost of many thousand dollars prepared a plant and put up their lights.

The lights were a failure & Beum refused to pay the Co. & demanded

them. The Co. knowing they could not recover, not wishing to have their failure made public stood the loss without a murmur.

(3) They lost heavily upon their contract with the City last year.

By the terms of their contract the City was to pay 70 cents per night for each lamp, if the lamps went out they were to pay a forfeit of 70 cents

1883-06-27

LAW OFFICES OF
ECCLESINE & TOMLINSON,
32 PARK PLACE,

THOS. C. E. ECCLESINE,
JOHN C. TOMLINSON,

NEW YORK, _____ 188

So many lumps went out that they had to refund to the City about 65 per cent of what they otherwise would have earned. This entailed a great loss.

- (4) Thin incandescent lights at the Hoffman House are a failure & the cause of much complaint, & will probably before long be removed.

This information we have obtained today. We deem it but proper to tell you that in some instances our inability to state what we represent is the cause of much embarrassment. If we could in our discretion state what we were acting for it would greatly facilitate us in the way of compromise. Mrs. Edison

Yours Sincerely
Ecclesine & Tomlinson

1883-06-29

June 29th, 1883,

Mr. Insull:-

We can probably let you have between 4 and 5 thousand
dollars to-morrow Saturday. Please ascertain and let me know
how it is to be divided.

F. S. Hastings.

per D.

1883-07-02

Bridgport Conn.
July 2, 1883

Dear Sir,

I am in receipt of copies
of your Bulletin recently sent
me in response to my request -
Please accept my thanks - I
have been much interested in
the information which the Bulletin
contains and am gratified to know
that the Edison system of lighting
is so generally in use and is so
popular -

In No. 16, the article on
Storage Batteries as records before
will hardly leave careful reading
in view of what has been done
in Quacore the past week by
means of a storage battery -
The Quacore papers of Friday morning
contain notices of the work done

(1883)

Hartford Daily Courant.

E. F. STRONG,
Bridgport Correspondent.

of a British storage battery in
 that city the evening previous -
 These reports would seem to show
 that the article referred to (from
 the Boston Herald) is very far from
 being a correct statement of the
 attempts of Bond to bring out a
 storage battery - I shall be pleased
 to receive your bulletins as they
 are issued, and if sent on subscrip-
 tion will most cheerfully subscribe.
 Yours Very Truly
 C. S. Strong

my
 copies of the
 paper of
 1881, & will be
 68

President's memorandum of business for Executive Committee, Monday July 2nd. 1883.

(1) OHIO AGENCY. An agency for promoting central station companies in the State of Ohio is now under consideration. The proposed compensation to be paid this agency for services is larger than we usually pay, that is to say, it is 20 per centum of what we receive, instead of 15 per centum. The proposed contract with this Ohio agency company has been examined by Mr Edison and Mr Lowrey, as well as by the officers of the Light Company, and they recommend it, as well as the payment of 20 per centum commission. Is the proposed action of the President, making the commission in this instance 20 per centum instead of 15 per centum approved?

(2) ARGENTINE CO. This matter was laid over from the last meeting. The President will state the case verbally, and Mr Edison is expected to be present at the meeting to present his views.

(3) CHILI CO. The President will present this matter verbally, and Mr Edison is expected to be present to state his views.

(4) FINANCES. The Executive Committee at its last meeting, June 18th., passed a resolution recommending to the Directors that the capital stock of the Light Co. be increased to One Million and eighty thousand dollars, said increase to be issued at par, to present stockholders, pro-rata, the assessments to be called in as may be hereafter determined.

At the same meeting the Directors of the Isolated Co. were recommended to pay ~~an~~ a semi-annual dividend of 5 per centum.

For stated reasons no meetings of these Boards of Directors have been called, and no action having yet been taken on either of the above matters, they are now again brought to the attention of the Executive Committee.

(5) CONSOLIDATION WITH OTHER LIGHT COMPANIES. The Gramme Co. has appointed a Committee of Three on Consolidation. The Committee consists of Mr. Flint, representing the United States Co.; Mr. Montgomery representing the Brush Co. (he also represents the Swan Co.); and Mr. Eaton, representing the Edison Co. it appears that the Brush and United States Companies are ready to consolidate with the Edison Co. To what extent shall we favor consolidations?

Mr. Edison,

In my financial statement to the Directors of June 6th. I stated that the expenses of the engineering department had been going on thus far this year at the rate of \$35,000 a year or nearly \$3,000 a month.

Those expenses have now been cut down more than one half and are only about \$1200 a month for wages. To day they are as follows, by the month:

Clarke	\$292
Solden	150
Atkins (blue print)	47
Dodge	85
Burnham	<u>92.50</u>
Total	866.50

Menlo Park expenses, most of which can be charged up to customers ultimately:

Cladius	\$125
Gmur	65
Anderson (mechanic)	65
Bengsten (mechanic)	65
Burnett (electrician)	63
Andrews (electrician)	63
Van Clief (carpenter)	<u>52</u>
Total	498
Grand Total	\$1,164.50

Of course there are some expenses besides wages, but after allowing for this I think the expenses of the engineering department, are to day cut down over one half.

EDISON'S LABORATORY EXPENSES. Up to the date of my report, June 6th., these expenses were going on at the rate of about \$40,000 this year; from January 1st. They have been greatly reduced. The laboratory expenses for the last 4 weeks, ending July 7th., have averaged only \$103 a week, or \$412.79 for the 4 weeks. To this should be added rent and certain miscellaneous charges. The expense even then, at the present rate, would probably not be much greater than \$10,000 per year.

Now if we can keep down the patent fees, law expenses, and not give any new retainers to lawyers and experts, we stand a pretty good chance of keeping our annual expenditures inside of our receipts, which ought to be (if a 10 per cent dividend is paid) \$37,500 from the Isolated Co., besides the various 5 per cent cash payments from subordinate companies.

But the great problem is how to wipe out the debt of the Light Co. to the Isolated Co., for borrowed money. This debt amounts to about \$30,000.

S. B. Eaton

July 7th. 1883.

per Mc.G.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for correction, and the company will not hold itself liable for errors or omissions in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

NUMBER 40	SENT BY C.V.	RECD BY M.	CHECK ✓
--------------	-----------------	---------------	------------

NORVIN GREEN, President.

Received at 791 BROADWAY.

852 BROADWAY
 Dated July 12, 1883
 To A. Edison Argyle House Babylon L.I.

65 Fifth Ave
 Shall not be home till
 Sunday if you need me
 before Argyle Can Call Argyle
 Hotel Babylon Eaten

This telegram has just been received at the office in 791 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRES.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for correction, and the company will not hold itself liable for errors or omissions in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

NUMBER 481	SENT BY C.V.	RECD BY Spick	CHECK ✓
---------------	-----------------	------------------	------------

NORVIN GREEN, President.

Received at 791 BROADWAY.

852 BROADWAY
 Dated July 13, 1883
 To A. Edison Fire Island L.I.

65 5th Ave
 Message received All right Home
 first train Saturday
 S.B. Eaton

This telegram has just been received at the office in 791 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRES.

1883-07-26

done to please day -

(1) In whom none is
the applica. to be
made. ~~is it~~

(2) To whom is the
power to run -

S. B. E

July 26

1883-08-15

The Edison Electric Light Company,
65 Fifth Avenue,

New York, August 15th, 1883.

Batchelor, Esq.

Arvy-sur-Seine,

France.

Dear Sir:-

Please send us your check by return mail for \$3,810. in
payment of 50 per cent unpaid on 73 shares, G. Batchelor; and 40
per cent unpaid on 4 shares, R. Batchelor, of your subscription
to Increased Capital Stock of this Company.

Yours truly,



1113-08-15

Mr. Edison, Have received similar letter from Batchelor. The figures Meadowcroft gave were \$225,000. They are the figures which we always give here in my office, when speaking of this matter. He did not know of the special figures made late that night for Batchelor.

I am sorry but this seems to be one of those misunderstandings that will occur where there are various sets of figures for the same thing. I will write Batchelor about it.

S. B. Edison

August 15th, 1888.

per H.C.G.

L.

File
OK

1883-08-22

New York,

August 22, 1883.

Dear Sir:

A special meeting

of the Board of Directors of the EDISON ELECTRIC LIGHT CO.,

will be held at the office of Deuel Morgan & Co.

on Sunday the 25th day of August

1883 at 3.15 o'clock P.M.

By order

F. S. Hastings

Secretary.

P.S.

For the purpose of considering
and acting upon the question
of increasing the Capital
Stock of this Company.

THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

1883-08-23

NEW YORK

23rd Aug 1883

S. P. Eaton Esq

I presume Mr Edison
means me to write
to Mr Borden about
wiring. Don't you think
it would be better
for you to write Borden
I explained to you
yesterday about the
delay at Lawrence.

Samuel Insull

1883-08-24

GROSVENOR P. LOWERY,
293 Broad St. (Deane's Building)
New York.

Aug 24th 1883

My dear Mr. Insull The en-
closed check for \$2500 is all
I can give Mr. Westing to-day & I
hope he will be able to let you
have the \$500 remainder.

Very
truly
yours
G. P. L.

1883-09-07

The Edison Electric Light Company,
Fifth Avenue,

New York, Sept. 7th. 1883

T. A. Edison, Esq.

Dear Sir:

Will you please attend a meeting at my office at
8:15 P. M. on Tuesday, September 11th., to discuss and possibly
settle open questions about wiring. This invitation is also sent
to Messrs. Johnson, Clarke, Chinnock, Bergmann, Greenfield, Hastings,
Moore, Hutchinson, and Vail.

Yours very truly,

S. B. Eaton,

President.

per W. H. M.

1893-09-11

Mr. Edison,
As I told you yesterday morning, I did not intend to
"recommend the acceptance of this proposition." I was only
discussing it in order to get at all the facts.

This is rather a small matter to bring up, but inasmuch
as your letter will go on permanent record, I would like to have
it changed. Let me suggest that you run your pen through "your
recommendation" and put over them these two words, namely, "the
question" That will make the matter all right, without writing
the letter over again.

S. B. Eaton

Sep. 11th. 1893.

per Mc.G.

Corrected
In full write another

1883-09-13

THE EDISON COMPANY
FOR ISOLATED LIGHTING.

GENERAL MANAGERS OFFICE,
513 4TH AVENUE,
ANSWERED

Please address reply
to the undersigned.

New York 188 188
FILE NO.

*The meter
must give 3 times
consumption in
New York*

Have 49 Consumers in
Roselle as per August
meter account. These bills
are classified as follows

Customers whose meters register between
two dollars

one and under 12

Between \$2 and \$3 10

" \$3 " \$4 9

" \$4 " \$5 3

" \$5 " \$6 6

" \$6 " \$7 1

One large consumer bill \$14 1

Central R.R. " 40 1

Street Service " 82.50 1

Total 49

It will be seen that private
consumption is very light - about 50%
of meter is from the street service and
two large consumers Electric & Central R.R.

1913-09-15

Mr. Edison,

Probably you have already seen this, but if not it will interest you. It is the losses on the Foselle plant and the Herald for the month of August.

S. B. Eaton

Sept. 15th. 1883.

per Mc.C.

RECEIVED

SEP 18 1883

ARKS. 1883

.....183.....
FILE NO.....

1883-84

Russell Station Aug. 83
 Operating Expenses
 Coal 102.54
 Labor 175.
 Valvoline 6.25
 Cotton Waste 5.27
 Stationery 3.75
 Petty Expenses 11.60
 304.41
 Motor Record* 279.86
 Loss for month 24.55

New York Herald Aug. 83
 Operating Expenses.
 126. Oil 27.28
 Grease lubrication 18.05
 750 lbs Coal 268.50
 Labor 276.91
 Carting ashes 16.
 375 lamps 150.
 756.74
 Rental from
 NY Herald 742.12
 Loss for month 14.62

*Including street service
 amounting to \$82.50

We paid their gas bill.
 \$111.00. included above -

Blank No. 2.

No.

CABLE MESSAGE.

1883-09-27

152

THE WESTERN UNION TELEGRAPH COMPANY.

All CABLE MESSAGES received for transmission must be written on the Message Blank provided by this Company for that purpose, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

A. B. BREWER, Secretary.

NORVIN GREEN, President.

Check.

Paris
Edison
65 - 5 Ave

Received

852 BROADWAY

Sep 27

Confirm Signature Batchelor today
authorizing Thomas Edison note to
him and meeting Edison Electric
light Company have sent papers
Walker Consul

1883-09-24

SOCIÉTÉ INDUSTRIELLE ET COMMERCIALE EDISON

Société Anonyme, Capital: 1,500,000 Francs

EXPOSITION INTERNATIONALE D'ÉLECTRICITÉ

Grand Diplôme
d'Honneur
PARIS 1881

Ivry-sur-Seine.
5, RUE DU PARC.

Know all men by these presents, that I
Charles Batchelor do hereby constitute and
appoint Thomas A. Edison, attorney and agent
for me, and in my name, place and stead,
to vote as my proxy at a special meeting
of the stockholders of the Edison Electric Light
Company to be held on the twenty-fourth of
September 1883, or any adjournment
thereof according to the number of votes
I should be entitled to vote, if then
personally present -

In Witness thereof, I have hereunto set
my hand and seal this eighteenth day
of September one thousand eight hundred
and eighty three -
sealed and delivered in presence

of James Hopple Charles Batchelor

1883-09-24

SOCIÉTÉ INDUSTRIELLE ET COMMERCIALE EDISON

Société Anonyme, Capital : 1,500,000 Francs

EXPOSITION INTERNATIONALE D'ÉLECTRICITÉ

Grand Diplôme
d'honneur
PARIS 1881

Ivry-sur-Seine. *le*
5, RUE DU PARC.

I now all men by these presents, that
I Rosanna Batchelor do hereby constitute
H^r. A. Edison, attorney and agent for me, and
in my name place and stand to vote as my
proxy at a special meeting of the stock-
holders of the Edison Electric Light Company
to be held on the twenty fourth of September
1883, or any adjournment thereof according
to the number of votes I should be entitled
if then personally present.

In witness whereof I have hereunto set my
hand and seal this eighteenth day of September,
one thousand eight hundred and eighty three
sealed & delivered in presence

A. James Heffelf

Rosanna Batchelor

1883-09-25

THE EDISON ELECTRIC LIGHT COMPANY.

65 Fifth Avenue.

New York, September 25th, 1883.

DEAR SIR:—

An increase of the capital stock of this company from \$720,000 to \$1,080,000 having been authorized by the stockholders, such increased stock is now offered for subscription at par to stockholders of record who shall be such at the closing of the Transfer Books on the 29th inst., in the proportion of one share of such increased stock to every two shares then standing in their names. (Subscriptions will be received for the exact pro rata of each stockholder, including fractional parts of shares).

The Transfer Books will close at the office of the Farmers' Loan and Trust Company at the close of business on Saturday, September 29th, and remain closed for ten days thereafter, re-opening on Wednesday, October 10th, at which date the option hereby given to stockholders will terminate.

Should there be any of the increased stock unsubscribed for at the termination of the above option, an opportunity will be given the stockholders to subscribe for such surplus at par, in the proportion of their several holdings as shown by the transfer books when closed September 29th. The duration of this second option will be determined by the Trustees after October 10th of which due notice will be given, and any surplus of the increased stock remaining unsubscribed for at the termination of this second option, will be disposed of by direction of the Board of Trustees.

Enclosed please find a form of subscription, which, if you desire to take your pro rata share of the increased stock, please sign and return to this office on or before the 9th of October next.

Subscriptions will be payable thirty per cent. upon subscription, 20 per cent. additional not before December 31st, 1883, and the remainder as required by the company, but not before May 1st, 1884.

Receipts will be issued for the thirty per cent. so paid, with the right on the part of subscribers to pay their subscriptions in full at any time and receive certificates of fully paid stock.

By order of the Board of Trustees,

F. S. HASTINGS,

Treasurer.

SUBSCRIPTION TO INCREASED CAPITAL STOCK

OF THE

EDISON ELECTRIC LIGHT COMPANY.

New York, _____ 1883.

TO THE EDISON ELECTRIC LIGHT COMPANY,

65 Fifth Avenue, New York City:

I hereby subscribe for _____ shares of \$100 each of the increased capital stock of the Edison Electric Light Company, authorized by vote of the stockholders at a meeting held at the company's office in the city of New York on Monday, the 24th day of September, 1883, and agree to take and pay for the same thirty per cent. thereof at the time of making this subscription, and the remainder at such times and in such instalments as may be called for by the Trustees of the said company, but not more than twenty per cent. additional by December 31, 1883, and the remaining fifty per cent. not before May 1, 1884.

In case of any default on my part in making payments of instalments as they may be called, I hereby authorize the company on twenty days' notice mailed to my address given below, to sell my subscription at public or private sale without further notice to me, and to apply the proceeds thereof to the payment of any instalments at that time due and payable on such subscription, with interest thereon, accounting to me for any surplus which may remain after such payments.

I enclose herewith cheque for _____
_____ dollars, being thirty per cent. on my subscription as above.

Signature, _____

Address, _____

1883-09-25

EDISON ELECTRIC LIGHT CO.,

65 FIFTH AVENUE.

New York, Sept. 25th, 1883.

It is requested that all shareholders who have not already done so, will please exchange their full paid installment receipts for stock certificates at the Farmers' Loan and Trust Company, 22 William Street, New York City, as early as possible, or if preferred, the receipts can be sent to this office when the necessary exchange will be made and stock certificates issued.

Yours respectfully,

F. S. HASTINGS,

Treasurer.

Mr. Edison

1893-09-28

The Ex. Com. decided last week to fill Mr. Ernesto G. Fabbri's vacancy as a trustee in the Light Co. and the Isolated Co. by electing Mr. C. H. Coster. He was Mr. Fabbri's right hand man in the firm of Fabbri & Chauncey and now runs their business.

S. B. Eaton

Sept. 28th. 1893.

per Mc.G.

OK

1883-10-13
Middletown, Conn.
Bankers & Brokers

D. W. Middleton
Great Britain
W. R. Smith
S. B. Middleton

36 Wall Street
New York Oct. 13 - 1883

Sept. Edison Electric Light Co.

Once the world was dark & dreary,
Until God himself was weary,
And he said "Let there be light"
That will make the world look bright.

We are likewise in distress,
Dark and gloom do us depress,
Help us out of this sad plight,
Turn on the electric light !!! -

M. D. & Co

1883-10-24

THE EDISON ELECTRIC LIGHT CO.,
45 FIFTH AVENUE.

New York, Oct 24th, 1883.

Dear Sir:

A special meeting
of the Board of Directors of the EDISON ELECTRIC LIGHT CO.,
will be held at the office of Drexel, Morgan & Co.
on Thursday the 25th day of October
1883 at 1 o'clock P.M.

By order

F. S. Hastings
Secretary.

P.S.

Object of meeting, election
of Officers and appointing
Executive Committee for
ensuing year

1883-10-30

W. B. Smith
The Edison Company for Isolated Lighting
AGENCY FOR
Maryland, Western Pennsylvania and District of Columbia,
No. 6 Hoen Building, Lexington Street.

Baltimore, Md. Oct. 30th 1883.

Mr. Samuel I. Merrill
Dear Sir,

I wrote to Mr. Perry
and have just written him to fill an order
for me, three shares of Parent Co. and
one of Isolated Co. or if that be impossi-
ble four shares of Parent Co. and have
promised upon you by asking him to put
stock in your hands properly transferred
for me. I can then remit through you
or direct to him when you tell me that
you have the stock in my name for
me. This may be a little informal but cer-
tainly a safe way of transferring stock espe-
cially in first deal. I hope I do not annoy you
by asking this favor. Please direct as above.
Very truly yours
Remy A. Helark.

1883-11-01

The Edison Company for Isolated Lighting.

AGENCY FOR

Maryland, Western Pennsylvania and District of Columbia,

No. 9 Hoar Building, Lexington Street.

Baltimore, Md Nov. 1st 1883.

Mr. Samuel Insull

Dear Sir:—

I received a telegram from Mr. Perry that he had bought for me three shares of stock in the Edison Electric Light Co. ~~the~~ Parent Co. at \$140 each and one share in the Isolated Co. at \$130. He requested me to send checks to you. I enclose two checks payable to your order one on the Marine National Bank of Erie for \$408. — the other on National Park Bank of New York for \$130. Will you kindly see the stock properly transferred and send the shares to me here and I will not trouble you again and shall be under everlasting obligations to you for this.

Very truly yours
Henry A. Clark.

1883-11-05

The Edison Electric Light Company

65 Fifth Avenue

S. B. Eaton Pres
E. H. Johnson Vice-Pres
E. P. Felt Vice-Pres
C. Goddard Secy

New York November 5th. 1883

T. A. Edison, Esq.

City.

Dear Sir:-

In connection with the work about being undertaken by the Committee on Expenses of the Light Co., it is important for us to know the total amount of our outside indebtedness, say down to November 1st. Will you therefore do us the favor to send us a complete statement, with items, of the indebtedness of the Light Co. to yourself. This is of course intended also to include the indebtedness of the Light Co. to the Construction Department, also of indebtedness for making estimates and everything of that sort. In a word, it is intended to cover every claim which you have against the Light Co., down to November 1st. 1883, such as experimenting, testing, making estimates, canvassing, sundry expenses of all kinds &c. &c.

It will be a favor to us if you will furnish this information within a few days, certainly not later than the end of the week.

Very truly yours,

Finney



President.

1893-11-05

Mr. Edison, I got the Newark papers about the breakdown, but not in time for this Bulletin. I concluded to say nothing in the Bulletin about our own breakdown. The Newark affair, I will mention in the next.

The Bulletin has been in press several days, and I expected copies this morning, but they telephone us that it may tomorrow before they can give us any. It is the largest Bulletin we ever printed, and the Italian ~~xxxx~~ School have more than had their hands full to get it out.

S. B. Paton

Nov. 5th 1893.

per Mc.G.

OK

1883-11-05

The Edison Electric Light Company

65 Fifth Avenue

S. B. Eaton Pres
E. W. Johnson Vice-Pres
E. P. Fahnestock Treas
C. Goddard Sec'y

New York, November 5th. 1883

T. A. Edison, Esq.

City.

Dear Sir:-

Pursuant to the informal understanding heretofore had between us, will you have the kindness to proceed with the work on the estimates for enlarging the Santiago station? Mr. Stewart will be glad to give you such suggestions as he can.

Very truly yours,



President.

OK E

RECEIVED
NOV 7 1953
ANSWERED

1883-11-07

~~7-7-53~~

Mr. C. C. C. C.

telephones that he may want for
this afternoon, but will telephone
up before early in the afternoon
stating just when he will want
you.

S. B. C. C.
per Mf

Mr. 453

1883-11-10

Mr. Edison,

I hope you will be able to give me by Monday the full statement of the entire indebtedness of the Light Co., which I asked for in a formal letter the first of the week? The Committee on Expenses adjourned until next week in order to get this statement from you.

Please tell me what day next week I can have it, and I will notify the Committee.

S. B. Eaton

per Mc.G.

Nov. 10th. 1883.

Handwritten notes:
Yours truly,
S. B. Eaton
Nov 10/83
The Committee on Expenses of the Light Co.

Handwritten note:
J. M. Sullivan
attest

THE EDISON ELECTRIC LIGHT CO.,
205 FIFTH AVENUE

1883-12-07

New York, Y. Reg. 1883

Major S. B. Eaton
Dear Sir

Will you please
read the enclosed correspondence
+ if you approve the same, please
have it forwarded to Mr. Insell

Yours etc.

Chas. L. Clarke

I don't know the facts. But Mr.
Clarke states them, & on that
I think he is right. I think
such communication as this

1
make it a point of
the volume + not of
anyone else, for there can
be no more to add

to the volume
of the volume

of the volume
of the volume
of the volume

of the volume
of the volume
of the volume

1883-12-08

Mr. Edison,

If the statement which you have been preparing so long of your claim against the Light Co. is not finished by the time Mr. Insull goes away, will it have to lay over until he comes back? I guess our Committee will think we have a pretty loose way of keeping books in this building, if it takes so long to make up a claim from books. Will it be finished before Mr. Insull goes. If not will it have to lie over until he gets back. I hope not.

Please advise me so that I can speak intelligently to the Committee, who frequently ask me about it.

S. B. Eaton

Dec. 8th. 1883.

per Mc.G.

How about this Mr Insull

Write Swinyard to send
Complete book of the Tariff
showing duties on all materials

Also have copies of Shomeken
maps, drawing station, Tender
+ Estimates profits made +
sent to

Borden,	Swinyard,
Garrison	Mr Fabbri
Stager	Mr Adams of Windlowd & Co
Painter	Dr Moses,
Graves	Geo H Ladd,
Arnold White	Stewart Santiago,
Ett g	Col Gorman,
Bailey	
Batchelor	
French	
~~Edw Biddle~~	
Moore	
+ 1 doz besides	

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

New York,

188

(1883)

25 lbs per long pen how

20 lb

8 2 1/2

1000

Edison

Greenfield is going
Ahead on that V.C.
Estimate - I have said
that you were opposed
to the job - but things
go right along. I wish
you would speak
your mind on the
subject. I suggest we
entertain my rule not
to come out to Broadway
Yours E. Edison

(1883)

Can contract between persons & Light Co
Kind stockholders to give notice of sale
to Light Co 2.

Sales of

American Patent

\$12.50 up to 800

& 1/2 % on amount received

above ~~that~~ 800

European Patent

\$2 per share up to 150

& 2 % of amount received

above ~~that~~ 150

Illuminating & Isolated
on same terms —

= 9

During last, at half
the above. ~~per~~
commission.

(1883)

The N. S. people are after the Navarro flats.
~~They have got~~

The Bush Swan Co. have closed a contract
with Bijou Theatre

Something must be done about the Capitol
before they leave.

Harrington for some reason or other refused
to see Ecclesine. Harrington saw Harrington.

Thos. A. Carson	933
Chas. Bataillon	100
Samuel Insull	14
W. S. Penny <u>sure</u>	35
Chas. L. Clarke	10

1092

3580

1750

11092

158

100

Stock

1 500 000
1 500 000
4 500 000
51 600
2 51 600

248000
7339223
579000

125000
168000
125000
43000
215000
215000

40.000	210
15.000	"
35.000	Good
100.000	Water
45.000	Set. 1/2
45.000	France
176.000	Europe
160.000	Emp. Del.
20.000	Set. 1/2
40.000	Gold. 1/2
65.000	E. E. Light
10.000	E per. 1/2
1.000	Set. 1/2

1057 : 833000

$$\begin{array}{r} 57 \\ 8330 \\ 41650 \end{array}$$
$$\begin{array}{r} 41 \\ 2 \overline{) 424830} \\ \underline{141610} \\ 283220 \end{array}$$

**1883. Electric Light - Edison Electric Light Company -
Defect Reports (D-83-028)**

This folder contains a series of reports pertaining to defects and problems in isolated lighting plants. These reports, which contain information submitted by Edison agents and companies, were compiled weekly and signed by Sherburne B. Eaton, president of the company. Included in the reports are summaries of problems recorded in "defect books."

All the documents have been filmed.

DEFECT BOOK REPORT FOR WEEK ENDING JANUARY 6th. 1883.

Commutators, Bad Insulation.

There have recently been several complaints about the poor insulation between the ends of commutator sections and the iron collar holding them in position. It is usually indicated by the appearance of ~~22~~ sparks across the mica when the dynamo is in operation. This is possibly caused by using mica of a very poor quality, or by metallic dust getting incorporated between the sheets of mica when it is glued together. It has recently given much trouble and has necessitated changing several armatures.

Breakage of Lamps.

Messrs. Carr & Hobson, of Bergen Point, complain that the carbons in their lamps break too rapidly.

Boston, December 29th. 1882.

Commutator or K Dynamo Uneven Bars.

I stopped at the York Manufacturing Company's place at Saco, and found that Mr. Perry had started one of the "K" dynamos. The armature had evidently been exposed to the weather as it threw out considerable water and showed signs of short circuit in consequence. He is unable to carry more than a partial load. The commutator was in poor condition, one block being about $\frac{1}{4}$ " higher than the others. This he has remedied somewhat. But it still causes sparks. Mr. Perry thinks that the

water was caused by frost in the armature. This could have been avoided by proper packing.

Buehler reports that the new mill socket is giving him considerable trouble. As intended the idea is all right, but it is impossible to screw on the lead base of the socket when we use a shade holder, for the plate of the latter is so large that it covers the lead base up completely. This brass plate is shaped thus, . If a round file is run across the edge as indicated by the dotted lines, this trouble will be avoided.

Cleat At the Mount Vernon Mills some of the iron cleats that
Screws. hold pendants have fallen, the screws were too short.

Mr. W. N. Stewart writes from Santiago as follows:
"We find that every socket, switch and safety catch should be tested before using, not only for conductivity but for resistance. We find that lead wires secured by screws are almost invariably loose. We get light all right in such cases, but also heat, breaking lamps and heating fixtures. The intense heat at the equator may have something to do with it. Switches of all sizes are badly built. They should be put together with stronger screws and more of them. Some will not make connection at all when received and have to go to the repair shop. Bergmann's switches NO. 216 are far

too slightly put together to stand the strain of opening and closing. The pulley sent out with our plant are altogether too slightly built for the work. The centrifugal force breaks the arms off at the rims.

Switches Not Strong. Pulleys Weak. Curved arms containing more metal would stand better than straight arms. Our shafting is very carefully leveled and balanced, but these pulleys will not stand the heavy belting and rapid motion.

There is room for improvement in the brush holders for "Z" machines. The screw holding the brush does not stand constant use, the thread soon stripping. I suppose the old plan of four brushes was not abandoned without good reason, but it always suited me.

We found one armature with a loose bar. How could such a fault pass the tests? The springs at end of commutator to prevent endways dropping of the armature are not usually stiff enough and have to be retempered."

Suggestions from Philadelphia about the driving pulley of the "K" dynamo.

I regard the dimensions of our "K" dynamo driving pulley as inadequate to the work required of it. The diameter 14" x face 9" x revolutions 900; work required to be done by it without slip 35 Horse Power. Taking the old rule that 1" belt running 1000 feet per minute

Driving

Pulley

"K"

Dynamo.

equals one H.P., we have velocity of 3667 feet per minute equal to 33 H. P., to be transmitted by a single belt, or 2 H. P., short of the work to be done. It is true that in practice we may expect from twenty to forty per cent more than the above safe rule according to the pliability of the belt, its length as effecting the arc of contact, and also its tension. Ordinarily we use a double belt pulled tight, and as our belt room is limited and oftentimes running nearly vertical, the tension required to prevent slip is so great that the journals heat badly. Whilst a double belt has more value than a single one if used horizontally, much of this value is lost when run nearly vertical with but small rate. I do not think that a double belt has the value that some attribute to it, for first; it has no more contact surface with the pulley than a single belt; Second; it is more rigid and thus on a small pulley its contact is not quite so good as with a single thin pliable belt. Third as our belts are run at high speed over a ~~small~~ small pulley, the centrifugal action of the double belt as it passes around the pulley has a tendency to prevent the close contact a single and consequently tighter belt, would give. As a larger pulley would require a larger and costlier driver, I recommend a broader pulley covered with leather as preferable to our present "K" pulley.

Catasauqua, Penn. December 28th, 1882

We also desire to say that the switch on the lamp
 Socket head the gutta percha comes off and leaves us no way to
 Key. turn the electricity off or on. Have you any other de-
 vice to remedy this defect as it is very annoying?

Boston, January 2nd, 1883.

Regarding the new socket I regret that I did not
 make my meaning more clear. Mr. Buehler attached the
 socket in precisely the manner indicated; but inasmuch
 as the wires must be left long enough to "fish", they
 twist about each other in screwing on the socket; it is
 here that the trouble occurs. If the shade holder can
 New be so made as to permit sliding the holder on to the
 Sockets. pipe and then screwing on the lead base (detached from
 the socket) this difficulty will be remedied. This
 twist of course cannot be surely removed from the in-
 side of the pipe and is liable to cause trouble.
 Bergmann has a shade holder designed to go with these
 sockets which suits the purpose admirably and permits
 us to use the shade or not as we prefer. The wires are
 attached to a wooden rim which replaces the rim sent with
 the socket. If these could be adapted to our mill work
 and we were allowed to use them instead of the present
 inconvenient form, much better results could be obtained.

New York, January 6th, 1883.

Will you please allow me to suggest that all lamps be marked or labelled according to their kind in this manner; 16 c.p. A; 16 c.p. B; 8 c.p. A; 8 c.p. B, etc., because in many cases I have known of B lamps being put into A sockets and of other sizes being so mixed up as to defeat the ends of our system. At the Record in Philadelphia we installed 8 c.p. Bs; 16 c.p. As and 32 c.p. As. One man put seven B lamps into A sockets in one night; they gave a life of a few minutes only. I also found that the 32 C/P lamps were used in unimportant places in the building to the loss of the office where they were wanted. Is not this the Lamp Company's duty?

Boston, January 2nd, 1883.

Short Continued complaint is received at this office that
Studs the brass studs on dynamo yokes are too short by about
for 1/2 to 3/4". If the dynamo runs right to left the present
Brush length is sufficient as the brush holders are made ac-
Holders. cordingly; but when the dynamo runs left to right they
are too short. Cannot this be remedied. The Edison
Machine works still continue to send out dynamos with
short brush holder studs, although complaints on this
matter extend for many months back.

Mr. Stickney will show to you two sockets which

Socket burned out last night at the Mayall Rubber Company.
 Burnt The trouble is evidently in the construction of the sock-
 out. et and not in the connection of wires. The Lamp did
 not short circuit.

New York, December 28th, 1892.

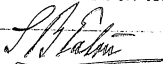
Mr. C. L. Clarke, Chief Engineer:

I fully intended to have steam on the Armington
 Engine & Sims engine No. 2 to-night, but when we got most ready
 Boxes. to start we found some dirt in the oil box on pedestals.
 We took cap off and found the oil channels would do more
 harm than good, so I decided to take shaft out and make
 everything right before starting. Will be ready I
 think by noon to-morrow.

New York! December 29th, 1892

Mr. C. L. Clarke, Chief Engineer.

We got the second Armington & Sims engine
 Fitting started this evening. We have not run it to speed yet.
 Engine. I think it will work well. Had a dispatch from
 Armington & Sims that they were shipping the third one
 to-day, will be here in morning. Will start to take
 out No. 2 to-morrow night. Armington & Sims must do
 better work or we should charge them with time for fit-
 ting up.


 President.

DEFECT BOOK REPORT FOR WEEK ENDING JANUARY 13th. 1883.

The following complaints have been received from the Western Edison Light Company:-

Socket
Screws. One of the sockets in the Smith plant at Appleton was found to be defective. The two screws holding the connection plate to the wood in the upper part of socket came so near to the screws passing through the shell, that after a short time the current arced and melted a portion of the socket.

Soldering Owing to a bad connection in one of the mills at Appleton where the wires had been imperfectly soldered
Bad and thoroughly taped, the wires became heated and caused
Contact. the tape to be set on fire. The defect was immediately discovered and remedied.

Suspend- At Mr. Doane's house during a recent cold snap the
ing steam pipes burst and let a quantity of water down in
Attach- the vestibule from the floor above. This water filled
ment the shield at the top of our pendant fixture. Mr.
For Steiringer's patent attachment was used to suspend the
Chande- fixture; the two safety catches in it burned out, but
lier. the water saturated the wooden block, and although the
wood was so wet it would not burn, the screws on one
pole were completely melted out. We had to take it
down and put up a new attachment.

One of the round cut-outs in Mr. Doane's house be-

Cut-outs
Short
Circuit.

came damp on the backside and caused the current to jump across the poles, a distance of about two inches, blackening the entire back of the cut-out and charring a portion of it.

Resistance

Boxes

Shrinkage.

The shrinkage of the wood on the face of resistance boxes in two cases under our notice, has brought the binding screws in the way of the movable contact arm so as to prevent its revolution.

We have received the following report in regard to the plant at the York Manufacturing Company's Mill, Saco, Me:-

Damp
Armature.

Out of the three dynamos set up two have been started. The first (as claimed by the parties at Saco) After running a few minutes threw out about a quart of water from the head next the commutator. The armature and commutator commenced at once to heat thereby causing the brushes to spark very badly, the result of which was a very badly cut commutator. The side screw in the brush holder and also the adjusting screw of same were badly bent, the journals were somewhat cut and the bearings had a tendency to heat badly.

No care
in
Starting.

Dynamo No. 2 had been started up with one of the pillar blocks insecurely fastened, the result of which was the binding of the armature on the field magnets, thereby tearing off the binding wire from rear end of

armature and laying bare the armature wire.

Crossed On examining the armature of dynamo No. 1 it was
Armature. found that it was crossed.

Commuta- The second armature which was sent for the K dynamo
tor at Fiss, Danes & Erben, Philadelphia, is found to be
Bars defective in the commutator. The outward ends of the
Uneven copper sections of the commutator are not perfectly
Ends. square. This makes a small crevice in which particles
 of copper dust deposit themselves and become fired by the
 action of the current.

The following criticisms on the plant at the Best Brew-
ery, Milwaukee, will be read with interest:-

Junction We find it very difficult to fill the junction
Boxes boxes in vertical mains with compound, where the boxes
Diffi- are connected near the ceiling. We think there ought
culty to be two openings, one to admit the compound, and the
in other to allow the air to escape. In the centre of
Filling. one or two of the boxes taken out of the Malt House after
 this trouble, we found large air holes. We are now
 filling up the groove around the junction box carefully
 with white lead in all cases where there is any liability
 of exposure to moisture. We also cover the branch
 mains from the box with rubber tubing for a safe distance

In our own mains going through the Ice House where there is always a great amount of moisture, we have used sufficient precautions so that no accident has happened.

Breakage
Lamps.

Twenty two lamps at the Worumbó Mills gave out since the first of January, each of which ran the following number of hours:- 160, 191, 280, 229, 489, 428, 123, 130, 175, 138, 48, 570, 440, 147, 70, 198, 38, 62, 234, 185, 594, 81, Average, $227\frac{8}{11}$.

Chicago, January 9th. 1883.

Lamps
Brass
Ring
Hursts.

A new trouble has developed with the new style of lamps furnished. The screw ring surrounding the plaster of paris has broken on lamps used in connection with our plant at headquarters.



President.

DEFECT BOOK REPORT FOR WEEK ENDING JANUARY 20th. 1883.

Merrick
Dynamo.

Mr. Francis found the Merrick dynamo heating badly, and ascertained that the reason was too small conductors from the brush holders to the switch board. These were so much too small that they heated very badly, even through the rubber covers could it be felt. Putting in more copper he found it a remedy. He thinks the same defect exists in all the dynamos, too little copper in the carrier to the switch board. This is worth attention in making the new K dynamos. Also on the Merrimac machine new studs had to be made for the brush holders as they were too short and they are so whenever the machine runs from left to right.

Too small
Leading
Wires.

Short
Brush
Holder
Studs.

Philadelphia, January 22nd 15th. 1883.

Shade
Holders
Do not
fit
Sockets.

The sample of "improved cock socket" before me does not fit the "improved holder"; but the improved socket without cock fits exactly. The former has a bead spun on it at A; this seems to have swelled the brass at B a little too much to allow its entering the shade holder.



Extracts from a report. "One of our former wiremen, Mr. W. C. Livermore having had much trouble with the new sockets short circuiting, brought in this after-

Suggested noon a sketch of suggestion he makes to avoid the trouble
Change in It is quite plain, being simply to put the binding screws
Position for the two poles on opposite sides of the socket, slot-
of Bind- ting the base so the wire can find passage to the bind-
ing ing posts. I forward same as an encouragement to in-
Screws in telligent attention to the details of our system by our
Sockets. men. I do not know what your newest socket is, but
think Livermore's suggestion deserves attention."

Short " I found that the safety plugs of the electrolier
Circuit branch circuit had been burnt out by a cross in one of
in new the lamp sockets. On taking the socket apart I found
Sockets. that the adjacent edges of the two pieces of spring
brass to which the wires are connected were not more
than 1-32 of an inch apart and showed signs of the
passage of the current from one to the other, such as the
partial melting of the edges and the blackening of all
of the interior of the socket. In two similar sockets,
Opposite the only ones I had at my disposal to examine, the cor-
Poles in responding spaces were 1-16 and 1-8 of an inch respec-
Sockets tively, showing that in assembling the pieces are not
Too close placed at any particular distance apart. In my opinion
Together. these brasses should be kept very much farther apart,
even if it is necessary to place them on opposite sides
of the socket. Certainly if they are placed so close
together that the slightest thing will cause an arc, a

1883-01-20

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variation of four hundred per cent in their proximity
ought not to be allowed."



President.

DEFECT BOOK REPORT FOR WEEK ENDING FEBRUARY 3rd. 1883.

Report was omitted for week ending January 27th.
because only two items were received.

Copper
Wire of
Poor
Quality.

A great deal of the wire now received from the Ansonia Brass and Copper Company is very hard and brittle and of poor conducting quality. It is particularly noticeable in the plants that have recently been installed. This is a matter which certainly needs immediate attention as it directly affects practical results of installations.

New
No. 215
Switches
Defective.

A defect has been found in the improved No. 215 switch. In several of these switches the copper contact pieces which close the circuit are fitted so tightly that the switch will not open the circuit when the trigger is released. It is also found that as the contact pieces are pushed down to close the circuit they do not both meet the conducting pieces at the same time. They make contact on one side, and, the shaft of the switch not being directly in line, the side that makes contact first, is obliged to maintain considerable pressure and pushes the other contact sideways in position. It would seem that these should operate simultaneously in order to work properly.

Chicago, January 17th. 1883.

Bursting
Brass Ring
on Lamps.
Defect in
New
Socket.

We send you to-day by express, a lamp with broken ring around plaster, which is one of the troubles we are now having to contend with. We also send a socket which you will see has been pretty badly burned. The brass receptacle which holds the lamps must have been twisted from the soldering holding it in putting the lamp in, thus causing a short circuit through the socket. This was one of the No. 1 key sockets in which we may at all times look for just such troubles.

Chicago, January 22nd. 1883.

K A
Armature
wires
poorly
soldered
to
connecting
sections.

The wires in the armature of the Smith plant at Appleton seemed to have been imperfectly soldered to the commutator arms, as we found large pieces of solder flaked off and the wires loose, which evidently caused the trouble. This is a KAdynamo.

Soft
Sections
in
Commutator

The commutator on the K dynamo used in connection with the plant at our headquarters here having become "out of round", we removed it Saturday for the purpose of repairing, putting in its place a new K armature from another machine, which almost immediately burnt out, a very bad cross having developed ~~xxxxx~~ in it.

3

Short circuit in Armature. As our wires were in perfect condition, the trouble was wholly within the armature.

Boston, February 3rd. 1883.

Lamps
Broken in
Packages.

Porcelain
Shades
Poorly
Packed.
Defective
Swinging
Brackets.

The foreman at R. H. White and Company reports that out of 500 lamps shipped to them, eleven were broken (glass) and thirty two more were imperfect. Also that out of 250 porcelain shades fourteen were broken. Many of the No. 410 suspended swinging brackets were defective in that the binding screws were missing.



President.

DEFECT BOOK REPORT FOR WEEK ENDING FEBRUARY 10th. 1883.Report of defects received from London.Pillow
Blocks.

Pillow Blocks for Z dynamos in some cases are not interchangeable. Lubricators for Z dynamos do not *heat feed* sufficiently to obviate heating.

Binding
Wire.

Binding wire of one Z armature is not sufficiently soldered, which finally became loosened and crossed the commutator.

Brush-
holder
Screws.

Binding screws of brush-holders are frequently bent from bad packing.

Binding
Screws.

Binding screws of switch board are not sufficiently rigid to stand the necessary bearing required of them. To make proper contact the threads of many are crossed.

Lamp and
Socket con-
nections
not same
size.

Terminals of lamps vary in size and will not allow the button connection to go home in the socket.

Poor

Switches.

Switches frequently heat from arcing due to inferiority of work. This is particularly noticeable in the eight light switch.

Lamp ter-
minals
vary in
size.

Lamps are found to vary sufficiently in size as to prevent connection being made in the acorn socket, English make. All our friends who have adopted our system complain bitterly of the shortness of life of both A and B lamps.

Lamps
Poor
life.

Switches are found to become defective after being used for a few months, the contact screws getting out of

the straight.

We quote following from letter of Archibald Coats,
Woodside, Paisley, N.B. dated the 15th. inst.

"Of the 31 lamps got from you since 5th. December,
not one remains out of use; all have been required to
supply the places of broken lamps. Surely you can do
something to prevent this ruinous breakage. You will
see from the dates of the lamps sent you on Saturday
that many had been only a short time in use, and I may
state as in the case of former breakages I previously
wrote about, many of these broke when there was no extra
pressure of current of electricity. Unless you can do
something to put a stop to, or at all events to greatly
lessen the breakages, it will certainly have an injur-
ious effect upon the business of your Company in this
part of the country."

Lisbon Falls, No. February 7th. 1893.

Spencer Borden, Esq.

Of the new lamps which were sent to the Worumbro
Mills to make a higher record than those first sent, are
now on the system. They were put on at various times
as the old ones came off and therefore no accurate idea
can be formed as to how long they will burn on an average
The longest time that any one, new or old, has burned
is 807 hours, the shortest is three hours and the average

Average
Life
of new
Lamps

3

is 207 $\frac{1}{2}$ hours. Twenty of the new ones have given out after burning the following number of hours:

37, 60, 28, 100, 2, 36, 24, 30, 94, 16, 201, 232, 192, 310, 410, 277, 321, 199, 511, 621.

There is no change in the speed from what I have reported heretofore.

President.

DEFECT BOOK REPORT FOR WEEK ENDING MARCH 3rd. 1883.

Boston, Mass. February 24th. 1883.

Hot
Bearing
on K
Dynamo.

While at Lowell preparing for the competitive test between the Edison and Weston systems, I found that in running the Edison K dynamo, the attendant found it necessary to use ice upon both bearings to keep them cool, which he did habitually. Placing a dynamo meter upon the belt, I found that it required four and three quarters horse power to run the machine with load on whatever. I would call your attention to this matter, thinking it is not as it should be.

J. W. Howell.

Santiago, Chili, January 11th. 1883.

Mistakes
in
Shipment.

I have reported mistakes in tools etc. sent us, through the proper channels, and now I have your letter regarding the mistake in shipping the E dynamos. This question admits of no error on our part. I ordered while in New York, the Z machines, two to be A and one B. This order I made in writing to Mr. Goddard and also left Mr. Dean a memo. to the same effect. I made the order from Mr. Kendall's cablegram for the A machines, adding one B for Lanz. We got two B's and one A. The extra armatures for those machines have now arrived, and not one will fit the machines, all being at least one

quarter inch too large. This is not our fault. Again, Mr. Goddard writes that I say nothing about wire for cables in my order for conductors, while in the very letter giving all details, I expressly stated that I had wire on hand for all cables. The letter is dated August 16th. 1882. These are a few specimen bricks out of a large pile. At 6000 miles distance these things are serious. Again we have a lot of 1 1-4" pipe here for various steam and water connections, but not an elbow, T or flange is sent with the lot. As this size of pipe is not used in Chili, we are put to some trouble to have the necessary fittings made. All of which shows the necessity of care in shipping our goods.

W. N. Stewart.

Testing
and
Marking
Volts
on
Lamps.

There seems to be some incorrect apparatus used in testing the lamps at the Lamp Factory and in marking the correct number of volts on them. It is found in a great many cases that out of a barrel of 75 lamps marked of the same volts, at least a third of them will vary in candle power when put side by side on the same circuit.

In reference to the improved style of common socket. The small screws which hold the base of the socket to the wooden block inside do not have sufficient fastening to

Improved
Common
Sockets.

Sockets
Flanges.

stand the amount of strain which it is necessary to use in screwing up the socket, or which will go on the socket by a slight blow on one side or the other. It is also found that the rubber ring which holds the shell of the socket in place, when screwed down, often forces these small screws from their holding in the wood, thereby making the socket entirely useless. It is also found that the socket flanges for 3-8" pipe are not tapped out sufficiently large to screw on the pipe. Several men report that they can put up six of the old style of sockets to one of the new style, on account of the difficulty experienced in making connections and screwing the sockets fast to the fixtures. Something should be done to remedy these defects as they make the new sockets very expensive to use.



President.

DEFECT BOOK REPORT FOR WEEK ENDING MARCH 31st, 1893.

Improved
Switches
Heat.

Many of the new switches heat a good deal. This is due to the contact plate becoming oxidized, and also to the vulcanized fibre (on which these plates are screwed) warping so as to cause poor contact. When the switches heat, the releasing springs lose their elasticity and the switch will not operate.

Poor

In lamps of recent manufacture the globes seem to be very thin. A great many of them burst when being handled. The neck of the globe seems to be particularly weak.

Hot Resistance
Wire in
Automatic
Regulators.

The size of wire used in the automatic regulators for resistance coils seems to be too small as it heats very badly. In some cases it heats so much as to cause the wood to smell as if being burnt.

Chicago, March 32nd, 1893.

Our Mr. Wirt reports following defects in apparatus inspected by him:

Switch
Board on
Dynamo.

Switch board on K dynamo at H. J. Roger's plant at Appleton, is splitting at the glued joints. The canvass

Canvass on
Armature.

next the commutator wears off or is knocked off by filing or sand papering sooner or later. Have put leather

rings on several of the dynamos when this trouble has come up.

Santiago, Chili.

Lock Nuts on Set Screws. All pulleys bolted to the shaft should have lock nuts. Without them they are sure to work loose. Shaft Square Head set Screws on Collars. collars also should have square headed set screws instead of miserable little screws to be set up with a screw driver.

plug
We burned out a No. 12 safety ~~switch~~ the other day. As plug ceiling cut-out and ceiling to which it was attached were all as dry as tinder, we had a first class Fire Proof Cut-outs blaze. Two men burned their hands badly in extinguishing the flames. We covered up the damage as quickly as possible, and by pure good luck no one saw the accident. Cannot some fire proof material be invented to use in place of these wooden blocks, which in this dry climate will burn in an instant.

Boston, March 30th. 1903.

Caps fall off of Safety Plugs. One of the brass caps on a plug in the carding room of the Worumbie Mills dropped off and fell into a card, and the Supt. tells me did about 33% damage. I have put two men at work fixing them. I have seen this thing before, but never with damage resulting there-

from.

The same night one of the springs on swinging
Safety bracket over loom gave out, and in attempting to replace
Plug it while the current was on, a short circuit was caused
too by the Worumba man; the plug in cut-out was too large,
Large. and the No.18 wire acted as the safety catch, and was
thrown on the cloth, burning small spots in it.

J. M. Eaton

President.

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11/15/18
11/16/18

DEFECT REPORT FOR WEEK ENDING APRIL 14th. 1883.

Composi-
tion
Safety
Plugs.

The new cement used for making safety plugs seems to absorb moisture to a considerable extent. Some of these new plugs were put in the Herald Buildings and have been tested several times. When they are very damp there is almost sufficient leakage to melt a three light safety wire.

Boston, April 6th. 1883.

"K"
Dynamos
Overload-
ed with
Running
500
Lamps
12 Hours.

Night before last they tried the system for the duty it will be called on to perform, namely to run 500 A lamps for 12 hours on 2 K dynamos. The bearings of the dynamos had to have ice on them all the time. The same thing is true of many of the K machines; I mention the Merrimac, Worumbo and Herald as instances. The arm-ature heated so towards daybreak, that Bates says the hand could not be touched to the pole pieces of the machine without being burnt. The canvass covering at the commutator end, had the appearance of being scorched and the insulation firmly stewed out of the armature and spattered on the pole pieces. When it got to this condition the sparking was so serious, Bates could not stop it and the commutator was much out.

These dynamos are provided with safety catches for a
 The New each pole. It is suggested that six extra safety cat-
 325 light ches be sent with each dynamo.

Dynamo. The oil cups provided with this machine are of
 the same principle as those furnished with the older
 dynamos and have been complained of many times. The
 Oil Cups verbal and written complaints on these oil cups would
 almost fill a small book. They will not feed with cer-
 tainty or regularity and cannot be accurately adjusted.
 Oftentimes the first warning that the oil cups are not
 feeding is a hot bearing. A cup having an adjustable
 sight-feed such as was used at the Mechanics Fair is all
 that can be desired and is reliable.

These dynamos seem to be built with a view of
 running them in one direction only, viz. from right to
 The New left; if they revolve from left to right the following
 Dynamo obstacles present themselves:

Built to
 run in
 one di-
 rection.

FIRST. The brush holder studs are short.
SECOND. The brush holders will, set the out-
 ward brush in dangerous proximity to the iron collar of
 the commutator and the inward brush will leave a space
 of 1 3-8 inches of the inside end of the commutator on
 which a brush cannot be used; it will also be found
 that the brush holders come so close together that any
 sideways adjustment is impossible. The brush holder

itself is an excellent one.

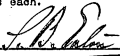
THIRD. The blower attachment for cooling the armature is built to revolve from right to left only, and would be useless if it revolved in the opposite direction it could be easily made so as to be reversible.

FOURTH. The oil channels in the bearings are made so as to feed for one direction only. If the dynamo runs from left to right there are no oil channels to furnish oil in sufficient quantity to lubricate the journals.

In actual practice there are as many dynamos set up to revolve from left to right as from right to left and heretofore one of the great advantages of the Edison dynamo has been that it was equally efficient when running in either direction.

Complaint is made that the lamps in the penitentiary at Anamosa, Iowa, do not give the life which is guaranteed. A statement is made of 60 lamps broken, with an average life of 189 1-2 hours each.

Poor life
of lamps
at
Anamosa.


President.

1883-04-21

DEFECT BOOK REPORT FOR WEEK ENDING APRIL 21st. 1883.

Vapor

Destroys

the Plas-

terson

lamp ter-

minals.

ditto.

Sockets

Short

Circuited

by Steam.

Wires

from Lamp

Carbons

not well

Soldered.

It is reported from the plant at the Portage Straw Board Co. that the steam and vapors so saturate the plaster paris on the neck of the lamps as to loosen the lamp so it will hang by the wires and that the plaster would liquefy and run down over the bulb of the lamp.

Sockets in paper mill at Appleton, Wis. get very much corroded by steam and dampness. Several No. 186 cut-outs have been found in which circuit could be obtained without unserting safety plugs.

In the lamps the wires leading from the carbons to the screw and plate terminals are not well soldered - these wires come loose. In some instances the wires are not soldered at all. In other cases the solder has been allowed to run down even with the surface of the tip so that an arc is produced which melts the solder and loosens the wire when the lamp is unscrewed.

Conductors

in Elec-

tric tube

contact.

with iron

Casting.

From inspection report on plant at Slater Cotton Co. Pawtucket, R. I.

One pole of conductors in electric tube is contacted with the tube. It is very probable that this contact occurs at one of the junction boxes and that the tube has not been carefully put up.

It is also reported that the junction boxes do not fit closely around the tube and that much of the compound runs out.

Complaint is made that the wires of the filed magnets in K dynamos are not thoroughly insulated from the base.

Dynamos
not
Properly
Set up.

This report also states that these dynamos have been set up on the floor without any wooden base frames under them, and that the dynamos were grounded in consequence.



President.

1883-04-28

DEFECT BOOK REPORT FOR WEEK ENDING APRIL 28th. 1893.

London, E. C. March 28th. 1893.

Brass
Collar
on Lamps.

Since the plaster of paris collar has been abolished it is found that in many instances the brass collars are merely held in position by the connecting wire, and that the slightest pressure put on to get them into any form of socket, loosens them from the plaster of paris. This might be remedied by the insertion of a small pin through the collar into the plaster.

Method of
Consign-
ment.

London,

We have again to direct attention to the fact that cases of material arriving have no distinctive mark nor anything to indicate contents. Thus causing an immense amount of additional labor and considerable expense before the several parts pertaining to each machine are found out.

We would suggest that each separate engine or dynamo should be distinctively marked and each of its parts marked in a similar manner, in order to facilitate identification.

London,

A barrel of lamps recently received ex "Erin" has been found when opened to be completely saturated with water. The paper is quite soaked and it will be impos-

1883-04-28

2

Lamps sible to use the lamps until they shall have been dried.
Badly The Lamp factory should be instructed to make the cases
Packed. water tight if possible.

Brush Some arrangement should be made so the clamp nut of
Holders of these brush holders could be thoroughly tightened, with-
"H" Dyn- out the brush holder slipping around on the bar. It
amos. cannot now be conveniently done.

Base Fra- The base frame of H dynamo should have on both
me of 35 sides, flat places for the ends of the belt, tightening
light or screws to press against, as the dynamos are often set
H Dynamo. up so as to be moved from either side. The bases are
now arranged with these flat places on one side only.

Santiago, Chile, March 7th. 1883.

Defects in . The resistance boxes for K dynamos sent with our
Resistanceplant answer but poorly. They are divided into divi-
Boxes sentions of a full ohm, and consequently a change of one
to San- point, when running several dynamos in multiple arc,
tiago, makes a difference of several candle power. I get over
Chile. the trouble by using two boxes in series, as one, and two
others ditto, the two sets connected with the machines
in multiple arc. This gives me wire enough for fine
regulation without jar in the lamps. I would suggest
that in the future, resistance boxes graduated to 32nds.

1883-04-28

3

of an ohm should be sent out for central station work.

S. B. Eaton

President.

Received
by messenger
April 28 1883

1883-05-12

DEFECT BOOK REPORT FOR WEEK ENDING MAY 12th. 1883.

Boston, May 4th. 1883.

No. 216
Switches
have weak
levers.

In the No. 216 double pole switch we find that the lever as made is a very radical defect. Being very slender and made of cast iron, it is very weak and is easily and frequently broken. It should be made of either brass or wrought iron, or remedied in some other way.

Poor
Bases in
all double
pole
Switches
of recent
Manufacture.

A large number of the new style double pole switches have recently been delivered with the parts set up on a vulcanized or gelatinized fibre base. It is found in several instances that where these switches are put up in buildings which expose them to a moist atmosphere, that the fibre bases absorb the moisture to a greater or less extent and soon become soft, thus throwing the working parts of the switch out of line, and causing them in some instances to make poor contacts, in other instances to stick in the working parts, and that they are unsatisfactory generally.

Defect in
Brush Holder
Yoke
of H Dynamo.

In the new H dynamo No. 151 installed in Haverly's Theatre, we find the yoke is not fitted correctly to circle of journal box, causing the brushes to move endwise, resulting in sparking. The arc should be longer so as to allow greater range in movement of brushes.

1883-05-12

2

Quality of
Glass in
Meter
Bottles.

The flint glass bottles for meters do not prove
as good as those of green glass, and complaints come
from Meter Department, Central Station, of heavy breakage
Poor Corks also the corks furnished for same are of poor quality,
in same. and badly cut and drilled.



President.

1883
J. H. Watson
President

1883-05-19

DEPECT BOOK REPORT FOR WEEK ENDING MAY 19th. 1883.

DEPECTS FROM SANTIAGO.

Cluster	Five and nine light globes have no exit at the top
Globes	for hot air. In consequence the sockets expand.
no Ventilation.	Lamps loosen and burn red or burn out, making great trouble. This fault makes it almost impossible to burn 32 Candle lamps for any length of time.
Irregular Light from Method of putting up Plant.	Our experience with three engines driving on one main shaft, and supplying six K dynamos and three Z dynamos is not favorable. Throwing on and off the heavy engine belts produces a flutter in the light which regulation will not entirely overcome. The pulleys, shafts, screws &c. require constant attention and are very liable to accident. The oil consumption is heavy and loss of power by friction great.
Poor Oil Cups.	I think the plan of driving direct from the engine wheels will be found more satisfactory in the long run. K dynamos heat excessively at bearings, and <u>oil cups seldom feed</u> , send different cups in future, with <u>sight feed</u> .
Bad Packing of Electric Tubes	The electric tubes arrived in bad shape from poor packing. Not one case perfect and $\frac{2}{3}$ were entirely broken up and contents arrived loose, many pieces being lost. When will this thing end?

1883-05-19

2

Poor The K A armature in the Ledger Building was recent-
ly short circuited. By the solder which connects wire
Connections to the commutator section becoming melted and making
Between contact between the sections. An L A armature in the
Armature Philadelphia Record recently had an accident of a sim-
Wires and ilar character. It is suggested that the connections
Commutator which are made between the wires and the sections of
Sections. the commutators are not thoroughly well soldered.

The use of soft solder which melts at a ~~very~~ low
temperature is liable to cause these accidents at any
time, and harder solder should be used, and all connec-
tions thoroughly well made.

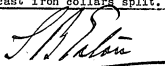
Uneven

Lengths

of Commu-
tator

Sections.

In several commutators which have from time to time
been complained of, that a few of the bars get loose,
it is found that the copper sections of the commutators,
are not all of the same length, and it is therefore
almost impossible to keep them in their proper position,
even by screwing up on the tightening collar. It is
also found that numerous commutator sections are of
softer copper than others. Tightening collars should
be made of wrought iron, the cast iron collars split.


President.

1883-06-23

DEFECT BOOK REPORT FOR WEEK ENDING JUNE 23rd. 1883.

Cylinder
oilers
on
Engines.

The Armington & Sims Engines are not furnished with a regular pattern of cylinder oilers. Almost every engine has a different kind. This is bad as it gets a great variety where one standard should be used. The Seibert Oiler seems to be the best. A 2nd. hand cylinder oiler was sent with the engine to the Steamer Alameda.

Key on
Engine
shaft.

Key, holding regulator pulley on shaft of 9 $\frac{1}{2}$ X 12 Engine at Bennett Building not well fitted. It binds on the inside end but does not fit on the outside end.

No. 201
corroded
by acid.

Chicago, Ill., May 22nd. 1883.
The New Style No. 201 shade holders with vulcanite rings are reported to be badly corroded in many instances from the soldering acid used in attaching the ring. This of course effects them only so far as appearance is concerned.

Hard
copper
wire.

Some of the No. 10 Black wire received by us from the Isolated Co. is so brittle that on being bent at right angles it will not bear to be straightened. It is wholly unfit for use.

Fibre base
bad in
switches.

I find trouble at Roselle with those 210 switches
which have fibre bases. They stick in damp weather.

Philadelphia, Pa., June 18th. 1883.

Defect
in
Lamps.

At Harrison, Havemeyer & Cos. Sugar House several
lamps have given out in, what is to me, a novel manner,
as explained by the Diagram The glass where
it is welded around the Platina wire is cracked on both
sides. Immediately below the weld on the left side is
a discoloration of the glass just under the weld, as if
there had been a short circuit at that point.

Lamps
not
carefully
tested.

We have frequent complaints of irregularity in
lamps. Although very careful in placing in each plant
lamps marked as being exactly alike in volts, we find
great diversity in the illuminating power of many lamps
in the same plant. This is noticeably so in case of
the Boston Advertiser plant.

President.

1883-07-07

DEFECT BOOK REPORT FOR WEEK ENDING JULY 7th. 1883.

Santiago, Chile, June 23. 1883.

Rain penetrated a building and water crossed the main wires supplying 50 lights. The wooden cornice took fire at the cross, and more water thrown on to extinguish it only made matters worse. Vertical safety catches were on both poles, 20 feet away, with No. 60 plugs. The lights continued to burn but the 3 K dynamos running showed over work. An examination next morning showed that the safety wire in one plug had fused and ran down to the bottom of the catch within the 1-32nd. of an inch of the bottom plate. Over this space the current had arced and kept the lights burning. We have substituted floor cut-outs for all verticals containing large size plugs to avert future difficulty.

Santiago, Chile, May 22. 1883.

The material lacking on first invoices was received one month after first shipment, but was so badly packed that many pieces were lost. Only two cases arrived intact, all the rest being broken into kindling wood, and tubes badly bent.

-4- Chicago, June 26th. 1883.

AUTOMATIC REGULATOR 2 K. Received June 4th. now

at exposition. The indicator part of the regulator does not seem to be sufficiently sensitive. It cannot be made to work well inside of an extreme variation of 8 candle power. The ordinary pressure indicator will work inside of one or two candle power.

The difference is in the magnet. The magnet of the pressure indicator is a strong one, allowing the armature to be at a fair distance (about 1-2 an inch and acting on the vibrator with a slight difference of E. M. F. The indicator magnet of the automatic regulator is comparatively weak, the armature necessarily closes at the poles (about 1-8 of an inch) and a much greater difference of E. M. F. is required to effect the vibrator. In regard to heating and consequent variation. The advantage is of course with the weaker magnet, though there would seem to be no fault to find with the pressure indicator.

AUTOMATIC REGULATOR - 1 K, FOR FIRST NATIONAL BANK.

In regard to sensitiveness this is the same as above.

There is one strip of insulation in the commutator about double thickness, so that it would cause sparking every time the contact passed over it. The contacts were so set as to travel so far in one direction as to short circuit the resistance just as it was all in. This would have caused serious trouble if not corrected.

The coils in resistance got too hot for safety and should have increased conductivity.

A great many lamps are not placed true in socket terminals, the trouble seems to be in the setting of them in the plaster paris. When these crooked lamps are screwed into sockets, they look exceedingly bad, on account of not hanging plumb.

A great many lamps are very indistinctly marked for volts, candle power &c. It is suggested that all the indoeating marks be done on the neck of the globe with etching ink, - this will be neat and durable.

1883-08-25

DEFECT BOOK REPORT FOR WEEK ENDING AUG. 25th. 1883.

Roselle, N. J. Aug. 3. 1883.

*Defective Buckets
at Roselle.*

Since we commenced lighting the streets on 26th. July, some seven of our street lamps have short circuited, two of them being new lamps just received of Bergmann & Co. In each case the wires were burned off in the goose neck of the lamps. Not only do the short circuits cause fluctuations in the light but increase our lamp renewals and cost of street illuminations.

The lamps and shades sent to Syracuse were carelessly packed, and the consequence was that on opening the box a great many were found broken. It is also stated that the magnets were received without boxes, and that the armature was loose in its box.

N. Y. August 3rd. 1883.

*Automatic
Regulators*

The defects mentioned below have accumulated from observations made on several automatic regulators which have been put in use, and seem to apply to the automatics generally, and not to any special regulator in particular:
1st. The wire wound on the relay magnets when constantly in circuit seem to be too small to carry the current, as it gets very hot. The insulation is over thin to stand the

heat which developed in the wire and consequently burns through, thus impairing the contracting power of the magnet

2nd. The wire on the regulating magnets of the resistance coils also has the same defect.

3rd. The resistance coils seem to have wire of too small size, as it develops great heat; and in fact in several cases gets so warm as to scorch the wood.

4th. The resistance coils of the automatic regulator are so arranged that when the plant is composed of more than one dynamo, it is necessary to keep the fields of the idle dynamo in circuit in order to obtain enough resistance. This is the cause of wasting a great deal of power.

5th. The relay magnets do not seem to be sufficiently sensitive to slight changes of the pressure of the current. They do not act promptly.

6th. The brass spring which acts the counter balance to the attraction of the relay magnet, does not retain its elasticity, and consequently does not hold its adjustment.

7th. The bearings which support the rocker arm should have small oil holes to permit of their being lubricated.

8th. The joints connecting the piston rod with the rocker arm, and also with the piston, seem to be fitted too closely. They often cramp the movement of the rocker arm.

DEFECT REPORT FROM RIVERSIDE MILL:-

After the wires are run in these grooves, the whole thing is filled with rosin, from the socket to the moulding, or rather from the top of the pipe, as the pipe is filled first. Then the socket is put on and the lamp in, and one of the fruit jar protectors put over them. So unless the fruit jar leaks it would seem as though the wires were well protected from dampness. I tried one of the jars with water and found that I could not screw it up tight every time.

Another bad feature is the reducer at the socket which is so small that it is hard work to get the wires through with a coating of tape on them.

Lawrence, Mass. Aug. 27. 1883.

The insulated flexible cord which Bergmann furnish for portable fixtures, is so badly made that it is frequently short circuited. Some times it is entirely burned off, but it generally only produces a continual flickering in the lamps supplied with it; while all others on the same circuit are steady?

S. B. Eaton
President.

per H. Hill.

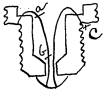
*Glass protectors
for lamps.*

*Not put up as
they should be.*

*Not insulation
on flexible
cord.*

DEFECT BOOK REPORT FOR WEEK ENDING SEPT. 1st. 1883.

The safety plug at the dynamo on line leading to Hilliers' Saloon, 14th. St. and 5th. Ave., burned out Aug. 22nd., owing to a break where one of the lead wires was soldered to the screw, causing all the current to pass over the other lead wire, which had not sufficient capacity to carry it.

Proof of the above is that only the perfectly connected wire burned out.  C. clean break in solder; A. to B. the part burned away.

Santiago, Chile.

For life
The life of lamps has averaged very badly. 1000 or more did not last 100 hours each, and 1000 more hardly 500 hours. But the new ones lately received promise to do much better. The continual breaking of lamps in the old lot, nearly broke our company, as consumers became very much out of patience.

long wires armatures and loose
The binding wires round an armature at Prospect House, Adirondacks, broke the other night while in use, and the machine had to be stopped until a new armature was sent from N.Y.

Chicago, Ill., Aug. 30th. 1883.

After a dynamo has run all right for some time one or more of the commutator bars will suddenly sink, and the machine commence sparking so badly that it becomes necessary to turn down the commutator to get an even surface. This is extremely hard treatment for the commutator and shortens its life.

Could this trouble be permanently remedied in the construction of the machine it would relieve us of a great deal of anxiety and give a longer and more satisfactory life to the apparatus.

*lights go
down
all the
time*

I am in receipt of a letter from W. D. Kurz whom has charge of the work at Appleton, Wis. in which he gives the following information:- I have a strange thing to tell you about one of our paper mills here. The lights all went out one night and lighted up again in about three minutes, before I had time to see what the trouble was. Upon examination I found the plugs in the main cut out were all burned and the cut outs were nearly so. It seems after the plugs burned out the connection was made by the hot solder which melted from the plugs and the current was conveyed in that way the remainder of the night.

I wish again to strenuously urge that at the ear-

liest practicable moment fire and water-proof safety catches and plugs be supplied for use in connection with Edison plants. The Mills at Appleton where the light is used are very wet, and it is extremely difficult to keep the dampness away from the safety catches.

New York, Aug. 1883.

The sheet metal screws which have been furnished for the bases of the common sockets, are not firmly soldered to the base shell of the socket. When these sockets are put on the fixture, a slight blow will break the socket entirely loose from the fixtures. The break always occurs right at the soldered joint of the shell.

The wire used by Bergmann & Co. for wiring fixtures does not have a good durable insulation. The insulation is very loose on the wire and is very easily cut through by sharp edges. The wire also seems to be of very poor quality, and very brittle.

The regulator sent to Harrison, Havomeyer & Co. Philadelphia, had one of the binding screws, which was to receive the line wires, screwed in so far that it made contact on the resistance circuit, and threw the resistance out of use.

*Two bases
common
sockets - very
poor quality*

*my wire
fixtures.*

Boston, Mass., Aug. 16th. 1883.

I was at the Slater Cotton Co's Mill yesterday, their Automatic I succeeded in getting to work very nicely. I think if the magnets were a little stronger it would be an improvement, and I would like to try a very high resistance lamp. Will you please send two or four of the 110 volt, or higher if you can.

Philadelphia, Pa., Aug. 16th. 1883.

I desire to call your attention to the insulation of the conductor attached to our dynamo. The wire is now covered by India rubber tubing - in one case at the Ledger the tubing was softened probably by oil, and cut through making a ground on the pole piece.

Yesterday I saw at the Philadelphia Record that the Rubber tube was cut through by the small cleat which held it against the pole piece, of course making a ground.

Rubber tubes
conducting
wires softened
by oil.

S. B. Eaton

President.

for Mr. A.

1883-09-29

DEFECT BOOK REPORT FOR WEEK ENDING SEPT., 29th, 1883.

Boston, Mass., Sept. 10th, 1883.

Mr. J. Dorden, Jr., finds that the 400 light machines, (and the same is true of the 350 lighter), when once it begins to spark, continues to do so almost beyond the possibility of prevention. He also finds, that even running without sparks, the brushes become so hot that they are very uncomfortable to handle. He suggests lengthening the commutator bars, so as to allow the addition of a third brush. Although there is doubtless copper enough in the two, to take the amount of current developed by the machine. Would the addition of another brush improve the running of these machines? Mr. D. says that sometimes the addition of an extra brush on a Z B machine makes it run as well as a Z A, whereas without the second brush, so much heat is developed that the machine is kept running with great difficulty.

Boston, Sept. 21st, 1883.

I started the Lockwood automatic yesterday evening. The regulator magnets seem too weak to do the work required of them. The action of this instrument, resembles that of the one at the Slater Cotton Co., which acted sluggish on account of weak magnets, and one of whose magnet wires separated and contacted with the base

400 light
Dynamos.

Automatic
Regulator.

1883-09-29

2

after one or two weeks' run, thus causing a continuous current to the dynamo magnets with the plug not inserted;

Ditto

The Lockwood automatic acts slowly and the magnets seem weak, and after running all the resistance in by hand, and pulling the plug the carbons in the lamps take several seconds to become black, or in other words there seemed to be a small amount of current passing through them for a few seconds after pulling the plug, indicating that the dynamo magnets were receiving some charge. If the regulator magnet wires, were contacted (slightly) with the base, it would have the effect of weakening the magnets and of producing a current to the dynamo magnets. I did not have time to fully test or demonstrate the above. The regulator acts, but very slowly.- Was this regulator tested before it was sent out?

Ditto

The following additional complaint regarding the Lockwood regulator has been received:- The only fault I can find with it is this, it does not act quickly enough. The reason I think is that the magnets that regulate the resistance are not sufficiently strong. The adjustment is I think all right; I do not think it could be improved. I am using 45 volt lamps, higher volt lamps would I think make a difference, I wish you would have some high volt lamps sent me. Do you think

it would be well to use such high resistance lamps as our 10 C. P. lamps? Machine runs perfectly. Pulley and bearing heats somewhat. Belt runs at a very acute angle, and shaft is drawn up against the cap, will try and remedy this to-day.

COMPLAINTS FROM MILAN.

(1) The C dynamos all come to Milan without having the bearing places of the shafts tallowed. They are lapped with paper and then outside of this is some tallow, but not inside. The sea air so rusted them that it took over two months to get them to run without heating. They ought to tallow them well and afterwards wrap them with a piece of felt that has been dipped into melted tallow.

(2) "Armington Engines." The Armington Engines came not entirely together and there were no marks to tell which piece belonged to each engine.

(3) Dynamos. Under the commutator bars we have always put japanned paper instead of mica in the small sizes of dynamos. I find that in many cases this paper carbonizes. I put mica in them now.

*Shipping of
Dynamoes*

*Shipping
Engines.*

S. B. Eaton

President.

per Mfg

1883-10-06

Defect Book Report for Week ending Oct. 6th. 1883.

*Rocker
from our
Dynamo*

The rocker arm on 100 light dynamo is not arranged to allow the brushes to be brought to the best position on the commutator. It should have more range of movement.

*Allen
Hall
our
Dynamo*

Complaint from Continental Worsted Mills.

Pillow block caps of L dynamo were not tapped correct size to fit oil cups.

Defective armature was sent with one dynamo. The wire connected to commutator sections were loose, making very high resistance.

It was found in Lawrence, Mass. that the 100 candle lamps gave considerable trouble, from the copper connections heating to a white heat, breaking the inner neck in a very few moments.

Commutator has two soft sections. Commutator was not true with shaft when dynamo was received. Have been obliged to turn it down.

*Shipping
Lamps.*

The lamps shipped from Lamp Co. ^{for} ~~from~~ Steamer Trenton were badly mixed, barrels marked 10 C. P. containing 10 C. P. lamps and vice versa. These mistakes in marking have put us to considerable expense, for cartage.

Santiago, Chili, Aug. 24th. 1883.

No wrench for tightening collars on K dynamo was sent. Wrenches should be provided, and we find that their frequent use

2

does no harm.

Meters

Our meters are very far from satisfactory. We often have 20 per cent variation between the two bottles of the same meter, using same current and same solution. We find terminal wires on zinc plates very loose in many cases, but solder them before using. I think the shunts are badly measured in some meters. But I have no instruments, so can only work by observation..

Boston, Mass. Sept. 29th. 1883.

At F. Jencken's I found that the armature had not been covered with canvass at the commutator end. I think the Machine Works should be notified of this omission.

Old Kentucky Woollen Mills.

Louisville, Ky. Sept. 27th. 1883.

Notes
disagree
later

I noticed the automatic threw out resistance until the lamps were entirely too high but did not work the other way at all.

I tested the magnets and found that those that should throw in resistance received no current, showing the circuit around them to be broken. I have been using the automatic as a hand resistance and indicator since I came. On testing to day I found the coil broken, to be relatively the same as the one on the Slater automatic. This one however is not connected with the base as that one was, but simply has a broken circuit. Its position is ^{shown} ~~marked~~ in the following cut  designated by the cross in center.

You will readily understand the effect it had on the regulator.

*Process
in
sockets*

The crosses in the sockets were occasioned by the binding screws being connected to the shell, and the key touching the same making a cross. Our men took two turns around the binding screw thus forcing it against the shell, as only one turn is calculated for.

Running

Another thing that I have been bothered with, is the commutator end bearing which heated badly, and with this I have spent most of my time at the mill. I borrowed a set of Babbit shells from the Exposition, and put a pair in the commutator end. It does not run to suit me yet, but I think that I can get it all right with a little more work. The shaft, or rather this end of it is badly turned and makes it hard to fit.

J. A. Eaton

President.

NO. 54.DEFECT HOOK REPORT FOR WEEK ENDING OCT. 30th. 1933.

Lawrence, Nasu.

Poor insulation
of wire
in
fixtures.

I discovered quite a serious defect on our circuit to-day. Last night a hole was burned through a brass shell of an Electrolizer arm and the covering, of some light cotton material, put on to protect the brass from the files, was ignited. I find to-day that the wire was defective, causing an arc and that the wire was almost as bad in the other arm of the electrolizer, and that the insulation was burned entirely off. The nut out of the fixture affords no protection in such cases. I ought to add that the fixture was in use for eight months and was sent out by Bergmann put together and wired.

*Tell the man that
ought to have been found
out before this time
and that the wire
was in use for 8 months
and that the
insulation was
burned off.*

The wire bands binding the armatures got loose and came off. This happened at Parrison, Havemeyer & Co's. shortly after starting. The same thing happened Aug. 30th. in the Philadelphia Record plant.

Poorly
made
Brushes.

which
The brushes are furnished with L. W. and P.
dynamos do not have the sections thoroughly soldered together. These sections often fall apart, sometimes while they are in use, and sometimes before they are taken out of the packages.

One of the armatures at the Prospect House, Blue Mountain Lake, recently gave out on account of binding wires coming loose. Another armature was sent there, when it arrived it was found to be larger in diameter than any of the others, and would not go in the field magnets of the dynamo. A second armature therefore had to be sent.

Defects
from
Havenmeyer
& Elder's
Sugar
Refinery.

*Is it true that
these are all old
Cutter's new
fly cut
drives.*

The sockets which are now supplied by Bergmann & Co. are not at all suitable to use in any place where there is moisture, as they very easily become short circuited. The switches are set up on vulcanized fibre bases, this absorbs the moisture and the switches get short circuited, and rendered useless. The composition safety plugs are of very poor quality, the composition is not a thorough insulator, it absorbs a great deal of moisture, it is very weak in the neck of the plug so much so that the plugs are often broken in screwing them in the cut outs.

Broken
dynamo
track.

On the track used for H. dynamos the lug which receives the belt tightening screw is not strong enough to stand the strain. One of those at Ford's Theatre was cracked off in tightening the belt.

Many of our meters arrive with imperfectly soldered connections, causing resistance and a bad result at the

Defect

in
meters.

Defects
in
meters
etc.
From
Santiago

end of the month. Some show about half the loss which we know should be indicated. The trouble seems to be principally in the shunt spools and at the connections between the cords and binding screws. If I had had instruments to measure the resistance of each meter before sending it out, we should have been saved very serious annoyance. As it is, in the absence of these instruments, I am testing them through a certain resistance with a high resistance galvanometer, and thus making a standard by one we know to be correct.

Copper
terminals are loose and require soldering, while nearly all binding
on zinc
plates.

More than half the copper terminals on zinc plates
screws have to be reamed out to admit the terminals.

J. B. Eaton

President.

NO. 58.

DEFECT BOOK REPORT FOR WEEK ENDING NOV. 24TH. 1883.

Pulleys.

A pulley on the main counter shaft in the station at Santiago, Chili, exploded on September 7th. This pulley was 30 inches in diameter, and of very poor construction, the rim being of the thickness of a sheet of paper and arms very slight. A section fifteen inches long was torn out of the face. All the pulleys in this section are of equally fragile construction, and have previously been reported.

Armington
and Sims
engines

Extract of letter from Mr. Hennis, at Milan to Mr. Batchelor. Oct. 22. 1883 - "The Armington and Sims engines work badly. We seldom can run a night without changing them off once or twice during the evening. It seems impossible to keep them to the work, and up to now it takes just twice as much oil that a "Porter" does.

Crank
pin Porter
engines.

We have had another accident with a Porter engine by breaking the crank pin. This makes two pins that we have broken and I find that both pins were defective, and that cracks were in the steel when put up.

Lamps
badly
packed.

Phila. Nov. 6th. 1883.
I have just opened one barrell of lamps and I find that there are five broken from bad packing.

Engine
bed out
of true.

Engine bed of 9 1-2 x 12 engine sent to Darlington and Runk 3-4 of an inch out of true. Exhaust valve was not bored or tapped for drip pipe, and no drip pipe was fitted or sent with the engine.

Bad
packing
of lamps.

New York, November 17th. 1883.
There is much difficulty caused by the way in which lamps are packed. Many breakages are recently reported. One shipment recently made to Public Ledger had five lamps broken. To Taylor, Wolfenden & Co. had three lamps broken. To Darlington and Runk at Phila. there were a great many of the lamps injured from damp and wet. This latter complaint has also come from many sources and it would seem that the lamps were damaged in storage.

In the 9 1-2 x 12 engine shipped by Armington & Sims to Darlington and Runk at Phila., there were many defects. The bolt holes which held the cap of the throttle valve were not drilled or tapped deep enough for the bolts to screw down to make a perfect joint.

*we never had
this occur yet*

Defects
in
Engine.

The throttle valve was very poorly threaded, so much so that the screw pipe could not be screwed in to make a perfect fit. The throttle valve itself would not fit firmly on its seat. It would not shut the steam off so the engine could be stopped. The valve had to be taken ~~down~~ off and ground down to a perfect fit.

The exhaust pipe and its connections were not properly fitted. There were no holes drilled or tapped for drip pipes, and no drip pipes were furnished.

The engine bed itself was 3-4 of an inch out of level, and could not be fitted to the foundation cap without considerable packing underneath. It is suggested that all engine beds hereafter be ~~planned~~ planed true on the bottom.

The engine had some new kind of lubricator sent with it, which works in a very unsatisfactory manner. This matter of cylinder lubricators has been referred to before in the defect reports, and it is very objectionable to have cylinder lubricators of different styles sent with our engines, as it gets a number of different patterns abroad with various engines, and if extra parts are required it is impossible to promptly ascertain what kind of lubricator is in use with a certain engine.

The Holland lubricator has proved so far to be the most desirable for use on our high speed engines, and it is requested that hereafter all engines be furnished with this kind of lubricator.

Chicago, Nov. 12th. 1883.

Last night we had a very cold snap, causing the glycerine in the dash pot of automatic regulator to stiffen so that the regulator would not work until the room had become sufficiently warm.

I write you in regard to this as the information may be of use at other points where the automatic regulator is in use.

Chicago, November 14th. 1883.

Our automatic regulator is out of order. The circuit is broken in one coil of regulator magnet.

This machine seems to be made with a view to make repairs an impossibility. To remove one magnet core from regulator bed-plate it is necessary to remove the resistance from the box, disconnect the commutator from the bed-plate, unfasten bed-plate from below and then the magnet may be removed. All this would be obviated by screwing magnets to bed-plate from above.

There is not sufficient clearance between one of the regulator magnet poles and the armature. The two come in contact at one part of the stroke, causing the rocker to bind and stick.

*Eds. or suggests a
dash pot beside of
glycerine pot & kept warm*

Automatic
Regulator.

W. H. P.

Notwithstanding these varied faults which require the frequent attention of an expert, I consider that the principle of the regulator is good, and when in order a great advantage over the old resistance box.

The breakage in coils is doubtless attributable to carelessness in manufacturing.

The adjustment of the automatic regulator on the Daily News plant seems to change gradually so as to cause the lights to run higher.

We have asked Mr. Edison for a remedy.

L. B. Eaton

President.

*Must run this
change down &
it is what causes it
can have no one else
Capable.*

**1883. Electric Light - Edison Electric Light Company -
Engineering Department (D-83-029)**

This folder contains correspondence and other documents relating to various technical aspects of electric lighting. Most of the correspondence is by Charles L. Clarke, chief engineer of the company. Related material can be found in D-83-043 (Electric Light - Thomas A. Edison Construction Department - Engineering).

All the documents have been filmed.

Jan 3/85

Mr. Edison,

I heard you state
that the Porter engines are
coming back or are to be sent
back from Italy. It will
be well for you to know in
view of this fact that last-
evening one A + S. and 2
Porter-Allen engines were
running on outside circuits,
the latter with their governors
entirely free and acting
independently and with
perfect steadiness. In truly

Yours, W. L. Clarke.

1883-07-05

New York,

July 5 1883

Mr. Edison,

OK

I would suggest that you have printed in pamphlet form for use of the meter man, that portion of the last edition of Kohlrausch's Physical Measurements relating to balances and weighing.

It is simple, not at all mathematical or too technical.

It seems to me that the meter man cannot know too much about how to weigh properly, and be able to adjust his balance, ascertain its errors and find the correction for the weights &c. It may prevent serious errors from creeping in.

Charles F. Blodgett

Jan. 19/83

Mr. Edison,

I consider this far
superior to the present mode of
~~constructing~~ the pressure
indicator. It is absolutely
free from sparks at the
relay points. Andrews
got it up and it has been
tried. Shall I not have
one made for Mr. Johnson
to take with to England?

↑ Please answer immediately,
instead of Yours truly
the present
style. Chas. H. Clarke

[ENCLOSURE]

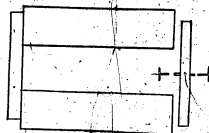


These two lamps
are in multiple, and
with back point of
relay.



These lamps will be only dull red
at any time.

Multiple and
with front point
of relay.



61-10-2521

THE EDISON ELECTRIC LIGHT CO.,
65 FIFTH AVENUE.

New York,

411883-01-31

Jan. 31 1883

Clarke

Mr. T. A. Edison -

Dear Sir:

It will

interest you to know
that not the slightest
diff. in E.M.F. can be
detected in a comparison
between the usual double
porous cup standard
and the Lamp Factory Standard.

Mr. Andrews finds the
resistance per cell to be
Double porous cup 134 ohms
Lamp Factory Stan. 130 ohms
20 cells of each class were used.

Very truly
Yours,
Chas. R. Clarke

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT

no 1055 of 19
2698
00003

343
53
290

Jan. 31/83

Mr. Edison,

I send you another curve.

It is remarkably good and a straight line.

The average gives $\frac{19}{1000}$ of one per cent. per variation per degree Fahr.

Sprague gives $\frac{24}{1000}$.

After your draftsman has taken copies from these curves and obtained data wanted will you please return them all to me.

Yours truly

Chas. L. Clark

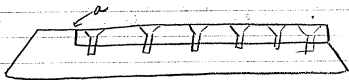
THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

Feb. 26/83

I do not like the design submitted by Mr. Fleming and if he should conclude after all to use it I advise the use of Signum Vitae in preference to any other wood.

Get it as old as possible, and well seasoned. Some that may be condemned for government use at Watowick will be best.

I send blue prints of the commutator as we now construct it and Company use at Central Station in New York have failed to develop any electrical defect. There is one mechanical defect which should be changed.



The movable bar should not butt at a and all the screw holes in the movable bar should be oval in the direction of its length.

This prevents expansion from
bowing the bar between the
screws which causes bad
contact and heat.



Wm. Helacke
Engineering Dept.,
Edison Electric Light Co.,
New York City,

P.S. No trouble is experienced with the Porter coupling at Central Sta. The shafts are brought well in line and the coupling once adjusted is left to itself and the Keys are allowed to remain where they find themselves.

To let them alone as much as possible we find to be good policy.

Q. He

1883-03-19

THE EDISON ELECTRIC LIGHT CO.
65 FIFTH AVENUE

New York

Wed. 19

1883

Mr. Edison —
B + C Ave. B + 17 St.

The rules of the
Manufacturers' Association
respecting safety
catches are as follows:—

"Wherever a connection is made
between a larger and a smaller
conductor at the entrance to or
within a building, some approved
automatic device must be introduced
in the circuit of the smaller con-
ductor, whereby it shall be interrupted
whenever the current passing through
it is in excess of its safe carrying
capacity." This is all that is
said.

Very truly
Yours,
Chas. F. Clark

THOMAS A. EDISON,
NO. 65 FIFTH AVENUE.

1883-04-12

NEW YORK

12th Apr 1883

Mr. Clark

Does enclosed agree with
light cos price list & do
B + W allow you any
discount off this

Yours
Insull

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

J. J. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
14	H. J. W.	13 Paid	

Received at **791 BROADWAY.** *May 11* 188*9*.

Dated *Memls Tex 7/11*

To *D. A. Edison 65 5th ave*

*Raising Cain at mounds
up last night lots of
fun Evansville or bust*

Chas

This telegram has just been received at the office in 791 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRE.

43

May 11. 83

Clark

May 11. 83

Clark
at home

May 11. 83

8

TOMAS A. EDISON,
255 FIFTH AVENUE.

NEW YORK

1883-06-01

1883

Mr Clarke:

We desire re-
quested you to refer the
enclosed circular on
Geometrical Blocks to
you.

~~Samuel Insull~~

Private Secy

Mr. Insull

1883-06-09

Has Mr. G. gotten
through with the 5 switches
that you borrowed for him
from this dept. If so will
you please see that they
are returned here.

Yours.

Chas. L. Blake
B.

9 JUN 1883

1883-06-20

Mr. Insull.

6/29/83

15

Do you know what has
become of Mr. Gee and when
he will return apparatus loaned
him? He has already kept it
double the allowed time.

Very truly

Wm. J. Jones

Chas. H. Clark

1883-06-22

I. B. DAVIS & SON,

Hartford, Conn. *June 22 1883*

Chas. L. Clark &

Edison Electric Light Co

65 5th Ave New York

Dear Sir: Yours of the 21st is received.
We can make the Ports of the Distributor
as per your diagram enclosed
with ports 14" internal diameter + 20"
diameter of flanges on round

Yours Truly
C. B. Davis Jr.

4/23/83

OK

Y. KING.

THE EDISON ELECTRIC LIGHT CO.
35 FIFTH AVENUE

1873-06-30

give to Sprague
New York, June 30, 1883
To put in his book
Mr. Edison, also Andrews

This information will
be of use to you in
reference to the U. S. Shunts
for feeder resistance.

German Silver Strip.

$\frac{11}{1000}$ in thick -

1 in wide -

1 ft long -

Current capacity $13\frac{1}{3}$ amperes.

Resistance $\frac{1}{100}$ ohm.

Weight 0.00395018 lbs.

Chas. H. Clark

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

THE EDISON ELECTRIC LIGHT CO.,
25 FIFTH AVENUE.

New York,

1883 - 07 - 06

6 July 1883

Mr. T. A. Edison

Dear Sir -

Speed Indicators
T. R. Harding & Son
Tanner Works, Leeds, England

Specify size & speed of your driving pulley.

Price in England £6-6

C. S. Bradley is not needed in the Testing Room, there are now ten men there, three of whom are well trained & expert. They can do work of any class that is required. Bradley is also too expensive, cannot you make use of him as an expert in a similar position to Anderson's in the Village Plant installations? Shall you not mark Leonard soon, who is studying the meter business? I wish to get rid of some of the young men, after a time they outlive their usefulness in the Testing Room, & are better elsewhere.

Yours truly Chas. L. Clarke B.

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

Form No. 1.

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TBOB. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
1230	C V	18 Collect	210

Received at 79 BROADWAY.

Dated *Menlo Park N.J.*To *Samuel Inoull 65 Fifth Ave*

redus too small I sent
you yesterday blue print with
proper eyes attached thereto on
separate paper

Clarke.

This telegram has just been received at the office in 701 BROADWAY, near Tenth Street, where any reply should be sent.

DIRECT WIRE.

THE EDISON ELECTRIC LIGHT CO.,
65 FIFTH AVENUE.

1883-08-22

New York, 22. Aug 1883

Mr. T. A. Edison
Dear Sir -

In Report on
Boiler Test at Glenbo Park
Under the head of Economy the
percentages are reversed. Please
make the correction. It should
read

13. June	vs. 19. July	14.05 %	inferior	Jamies
14. "	" 19. "	13.41 %	"	" "

Yours rc.

Chas. L. Clarke, Jr.

Put this in the
Report

THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

1883-08-23

NEW YORK, 23rd Aug 1883

Mr. Clark,
Will you please
hurry up the comparative
estimate which Claudius
is making.
It is important
I should have this
immediately

Rosa Edison

8/24/83

Mr. Claudius has taken special
 pains with this. Has made a
 new board with finer wire.
 Commences measurements of
 C. 7th Y. today.

Chas. Clark

1883-08-25,

Mr. Insell

I ordered these levels
for Mr. Andrews to save time.
Will you please attend to it &
it belongs to your desk.

W. H. Insell
S. J. Insell
W. H. Insell

W. H. Insell
order for W. H. Insell
explain to them
they are the
levels ordered
in Clark

THOMAS A. EDISON,
Central Station, Construction Dep't,
No. 65 FIFTH AVENUE,

1883-02-
Form L.

New York, Aug 188

Clark -

I thought we agreed some time ago
that the temperatures of the armatures
should be taken in all future
tests. I think a field curve also
ought to be ^{on new experimental machine} run & you seem to have
plenty of talent down there, ~~with~~

Edison

THE EDISON ELECTRIC LIGHT CO.
105 FIFTH AVENUE.

New York

188

1883-89-20

Mr. Dussell,

Bergmann and
Cory have a motor
which can be ready in
a few days of $\frac{1}{3}$ H.P.
The motors of other powers
are being made but must
be experimented with

Ed

9/10/83

THE WESTERN UNION TELEGRAPH COMPANY.

1883-09-22

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBERS	SENT BY	RECD BY	CHARGE
1	M	MS	16 Paid

Received at WNT Sept 22 1883

Date New York & Dep't at Newark

To A. Edison

Meals Park

O.K. at Central Station

probably not ready Sunday let you

know tomorrow

Clarke

Mr. Clarke,

Mr. Insull, 11/1/83
Unfortunately I cannot make
use of these cards as the sense of
the individual spring is not given.
See other data and please. (Ch. Blumple)
Here are some cards which came from Louisville from

Doubleday.

S. Insull,

Sept. 20th. 1883.

per G.

I

1883-10-03

Mr. Clarke,

Doubleday has returned these cards from Louisville,
giving the information which you desired. Please return when you
are through with them.

T. A. Edison,

October 3rd. 1883.

per G.

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

1/4 HP motor data

1873 12-03

New York,

Oct. 3 1883

Mr. Edison,

I find from the complete tests
on the 6" armature motor the
following to be the results.

Armature Resis. average at Temp.
of 50°C 10.56

Ampere capacity (safe) 2.88

On a 107 volt circuit the
speed with no load will be
about 1700

With the full load (2.88 amperes) 1200

Total ft. lb. absorbed in armature 13650

Of this, there are developed in heat 3880

Developed in work 9770

The field resen. is 160 ohms
and requires in energy
on a 107 volt circuit

3170 ft. lb.

1883-10-03

New York, _____ 188

Therefore when the motor is
developing its full safe work
of 9770 ft. lbs. the total expenditure
will be $13650 + 3170 = 16820$ ft. lbs.
and the efficiency will be
58.1 per cent.

Taking into account journal friction
of the armature shaft it will be
absolutely safe to call it a
one quarter HP motor with efficiency
of 50 per cent.

Chas. H. Leake,

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

P.S.

I consider the brush holder and brush open to
improvement. The commutator connection's should
be made so that the brushes bear on the side instead
of top and bottom. They are then easier

1883-10-03

New York, _____ 188

inspected and adjusted.

It is also a question for you to decide whether you will allow the present loss of energy in the magnets or have more wire. What do you say in reference to it?

W. E.

10/13/83 1883-10-13

Mr. Edison.

Ami - The first card because it is inked, also the third because the condenser was not used, consequently the valve had to follow longer. This means that of necessity the engine ran at slower speed, but the notes give the speed the same in all cases. It should be taken from a ten minute record. The second and fourth cards seem to be taken from opposite ends of the cyl. and under the same conditions.

Practically the result is 376.3 H.P. for 2800 lamps
or 7.49 lamps per H.P. *Robt. Stewart*

5.62
 1.71
 3.91
 350

1883-10-13

Mr. Clarke,

Can you inform me where I can get a dial speed indicator, such as you use in the central station at Pearl Street?

I want one as early as possible.

T. A. Edison,

October 13th, 1883.

per G.

Mr. Clarke,

1883-10-25

Referring to the attached letter from Mr. Andrews in regard to connecting the fields of the 400 and 800 light dynamos, will you please have these boxes made so that they will go together

S. Insull,

October 25th, 1883.

per G.

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-10-27

New York,

27. Oct 1883

Mr. C. H. Campbell
Dear Sir -

I rank two of the
enclosed drawing in brass, also
2 brass discs $2\frac{1}{8}$ in. diameter, $\frac{1}{8}$ in
thick with or without hole $\frac{1}{4}$ in
diam. Shall probably rank two
brass rings (size to be ascertained)
later, but "sufficient unto the day
is the evil thereof."

Yours RC.

C. P. Munham

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

New York,

Nov. 7 1883

Mr. Edison,

Will you please
give me a copy of any
plan, the electrical conductors
for which are being determined
now?

Chas. H. Clough

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

Mr. Clarke,

Will you please give me the information asked for by
Mr. Edison in his memo. on enclosed.

S. Insull,

November 14th. 1883.

per G.

Send the enclosed paper & say this
is report of our Mr. Clarke, Engineer
price of new 200 light \$725. FOB New York

1883-11-14

Wm. Eaton, Pres.

11/14/83

What shall be done with reference
to the Muscle Laboratory? If not heated by
steam the water in the tanks must be let
off. Will this risk the insurance?

Mr. Claudius can keep all the fire necessary
for him in a stove which is there.
If there is no objection I will say no
steam heat, turn off the water to prevent
freezing pipes & tanks and let Mr. Claudius
depend upon his stove.

A. B. Hewitt,

Memo

1893-11-14

Mr. Clarke

I think you had better
see Mr. Edison about discharging
Mr. Claudis. Read over the
contract with Claudis before
you see Mr. Edison. Please
attend to it promptly as there
seems to me to be no one in
carrying Claudis on our pay
roll.

S. B. Eaton

Nov. 14, 93

per M^y

Memo

1893-11-14

Mr. Clarke

Please see Mr. Edison
about this you are to see
him about Mr. Claudis,
you might discuss this
at the same time.

S. B. Eaton

Nov. 14, 93

per M^y

1883-11-20

1/20/83

Mr. Exam,

Your note in reference to the capacity of the meters in 100 p. lamps at hand. The experiment will be tried today if not absolutely prevented by inability to use a dynamo in Testing Room.

Anyway, however, that the proper capacity of the shunts was once determined and on the basis of lamps requiring 0.75 ampere each. Assuming this to be a correct determination the capacities of the shunts are as follows:-

Name of Shunt	maximum amount current which shall be put in meter		Capacity in 100 p. lamps each, 0.75 ampere
	ampere capacity	amps	
6 lights	4.6875	6.25	9.5625
12 "	9.375	12.5	19.125
25 "	18.75	25	38.25
50 "	37.5	50	76.5
100 "	75	100	153

I found for German Silver shunts in open air intended merely for feeder resistances that a strip one inch wide and $\frac{1}{100}$ " thick had a capacity of $13\frac{1}{3}$ amperes or a capacity of 30 amperes for the same size as a 25 light shunt.

Send Copy this to
General Andrews
German Silver Meter man

783-11-20

This would be an increase of 60 per cent. above the capacities which I have given in the table. This would not be practicable however because the result is for open air, whereas the shunts are sealed in a box without ventilation. Besides I do not believe in allowing the shunt to rise more than a few degrees above atmosphere. It increases the resistance of the shunt, which produces an error against the consumer. The heating of the shunt raises the temperature of the air in the meter which in turn increases the temp. of the shunt and the error is still further increased. This rise in temperature would not have much effect in the bottle circuit in account of the compensating resistance. I think the old determinations which I have given should be taken, but will make new experiments.

Chas. Keeler

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

1883-11-21

New York, Nov. 21 1883

Mr. Edison,

The experiment on 25 light meter shunt was made yesterday.

The shunt was corrugated, placed in a horizontal position and protected from air currents by a paper box thus making the conditions the same as they occur in practice. The thermometer bulb was placed between the corrugations as in sketch.



Width of shunt $2\frac{1}{4}''$

Thickness " $\frac{100}{10000}$ " (exactly $\frac{115}{10000}$ C.P.B.)

Temperature of Room 20°C

Fifteen minutes were required for thermometer to become constant for each test.

(1883)

New York,

188

Current in Amperes	Lamp. Shunt.	Remarks.
10	23° C	Heat just perceptible.
17	39	Warm.
22	47 ~~Am~~	Very Warm.
28	62	Hot.
35	77	Very Hot.
39	93	Too hot to touch.

If you will select any point as the safe maximum limit I can readily give you the capacity of all the shunts in 10 c.p. lamps.

A. H. Clarke.

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

Mr. Clarke,

1883-11-23.

Mr. Cowles is in need of a man to test his wire at
the factory in Ansonia. Mr. Edison suggests that Mr. Claddius
would be a good man for the position. ~~If you do not require Claudius~~
If you do not require Claudius, will you please send him down to
see Mr. Cowles. Please advise me what ^{you} will do.

S. Insull,

November 23rd. 1883.

per G.

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-11-24

New York, Nov. 24 1883

Mr. Bussey,

I will see Mr. Cowles
in the matter first.

I think it is a great
mistake to let Mr. Claudius go
as he is capable and can be
made as useful in new work
as he has been useful in the
past at Menlo.

I shall exert myself
to get I can for his behalf
and for his employment
with whatever it may be.

Please bring this to Mr. Edison's
attention and ask whether he
thinks that he can positively
recommend for Mr. Claudius in
the way of retaining him in
the Construction Co.

C. L. Deland

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

This part faithful service entitled
him to every consideration.

We have no use for him at present so I thought
I would write you when he comes in
and see if you could use him.

Mr. Clarke,

I return you herewith your memorandum to Mr. Edison.

You will find that he has marked the shunt that he prefers.

S. Insull,

November 23rd, 1883.

per G.

B

Form No. 1.

Memo. Park

1883-11-26

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted to by the sender of the following message. Errors can be granted against only by returning a message back to the sending station for correction, and the company will not hold itself liable for errors or delay in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the delay is not prevented by the fault of any one. This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

NUMBER	SENT BY	REC'D BY	CHARGE
503	KOB	W	16 paid

NON-VOL. GREEN, President.

Received at 852 BROADWAY.

Nov 26 1883
Dated *Memo Park 11/26*
To *Chas Clarke Esq & Co*
Mr. Stillwell says who does
you know you gives me Key
only by Mr Edison's order.
Claudius

Mr. Green
Delivered 11/26/83
Received 11/26/83
11/26/83

This telegram has just been received at the office in 852 BROADWAY, just below Fourteenth Street, where any reply should be sent.

DIRECT WIRES.

1883-11-30

11/30/83

Mr. Lussell,

The 1st item I have nothing to say about as I have already written you fully on the proper manufacture of marine glue, and Oakley gives reasons for that which he is using being bad.

2nd I do not believe he gets iron from the glass of his graduated bottle but will have experiment made to see what can be obtained.

If his muriatic acid is impure and contains iron, he would get the iron test anyway and he does not state that he has obtained ~~pure~~ pure acid.

Yours truly,
Chas. H. Smith

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT

1883-12-05
THE EDISON ELECTRIC LIGHT CO.,

25 FIFTH AVENUE,

Results of Experiments
on Safety Catch Wire New York,

in Chevy Chase

Dec. 5 1883

Mr. Dinsull,

No formula has ever been made but Mr. Andreux made an exceedingly valuable set of experiments of which I send you a copy.

These experiments were made in the open air and will therefore meet your wants exactly. The experiments for safety catch plugs were made with the wire inclosed in the plugs themselves, and would give quite different results, entirely unsuited for determining the proper size for the open air.

Chas. L. Leventy

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

Mr. Edison,

12/6/83

The President is anxious
to have something done with
reference to Mr. Claudius.
According to your suggestion
I saw Mr. Cowles of the Am.
and he stated that you had
called his attention to Mr. Claudius.
Mr. Cowles noted down the points
which I had to say in Mr.
favor, which I have sent
with a letter; after that
Mr. Claudius about
of Chemistry, Mr. Cowles
the same person who is
testing also to make copper
which I feel confident Claudius
do, after freshening his memory
he states that he studied and
had laboratory practice at
for three years, and had to
an examination in
entering the Prussian Telegraph
service.

In any event Claudius
entitled to much consideration
from this Company, having
with it from the start
thoroughly faithful.

Mr. Edison,

M/10/83

The President is anxious to have something done with reference to Mr. Claudius. According to your suggestion, I saw Mr. Cowles of the A. S. and he stated that you had called his attention to Mr. Claudius. Mr. Cowles noted down the points which I had to say in Mr. Claudius's favor, which I have done with a letter; after that Mr. Claudius about the of Chemistry. Mr. Cowles is the same person who is testing also to make copper which I feel confident Claudius, after freshening his mind, he states that he studied and had laboratory practice at for three years, and had to pass an examination in entering the Prussian Telegraph service.

In any event Claudius is entitled to much consideration from this Company, having with it from the start thoroughly faithful.

1883-12-8

He certainly does not deserve summary dismissal, and will look at the contract the terms of its renewal higher salary you will, conclude with me, that his term does not expire next May, the date at which increase was made.

Put aside from this he will be given every chance either to continue with the Company or leave. His services will be to assist him in other matters.

C. H. Clark

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

1883-12-05

Mr. Clarke,

As you are aware the pressure indicators first put out in our small stations proved absolutely useless. Mr. Edison informed me that this indicator was got up by your Department, and, consequently, when we ordered the indicators it was but natural that we should presume that they would work all right. We find ourselves in the position of being compelled to take back the old indicators and put new ones in their place. I want to get at exactly who is responsible for the old indicator, as, if possible, I should like our Construction Department to be reimbursed by someone for the loss we have been subject to in connection with this matter. I presume that if the indicator in question emanated from your Department we would have the right to claim from the Edison Electric Light Company the amount that we have lost.

S. Insull,

December 5th, 1883.

per G.

1883-12-07

Mr Clarke,

I return you all the documents with relation to Claudius
as I think they should be in your hands and not in ours.

S. Insull,

December 5th, 1883.

per C.

A

Mr. Insull,

12/7/83 1883-12-07

I return this correspondence to
you, as all matter on this subject is
Mr. Edison's possession.

C. C. Clarke

THE EDISON ELECTRIC LIGHT CO.,
65 FIFTH AVENUE.

1883-12-07

New York, *Y. Ves.* 1883

Mr. J. Insell

Dear Sir,

The pressure indicators in question were never recommended by me or through me by the Engineering Dept. The indicator was designed by me, but Mr. Edison in ordering them did so on his own responsibility. The Engineering Department simply tried to embody in the instruments the numerous conditions which Mr. Edison insisted it should have.

He accepted the instruments on his own responsibility. A few were ordered, I think one dozen, and immediately put in use at Sunbury and Shamokin. If they proved entirely unsatisfactory, many more numbers ordered afterwards for other places?

Mr. Edison was all along aware of the difficulties which developed but continued to order and use them.

According to the resolutions adopted when the Standardizing Committee was organized no innovations

1883-12-07

New York, _____ 188

on old practices, or new apparatus or appliances can be introduced unless authorized by that Committee, or by the Special Committee of that body after having been referred to said Committee by the general Committee. Latitude is allowed however to individuals to make departures from the established rules when sudden developments require it, but the responsibility of failure on account of such changes rests on the individual taking the responsibility of making the change and he must stand the consequences.

This pressure indicator was never passed upon by the committee in any way, and I disclaim any responsibility for myself or the Engineering Department as represented by me.

The Engineering Dept., as far as innovations are concerned is subject to the action of the Standardizing Committee, and this Committee alone can make the light be responsible. If Mr. Edison as

1883-12-07

New York, _____ 188

Engineer pro tem. of the Light Co recommended the indicator to himself as head of the Construction Co and can persuade the Light Co that he had a right to do so, then the Construction Co may possibly be entitled to recompense, but even then it is an open question, and dangerous to the interests of the Light Co if decided against it.

The Illuminating Co as well as all foreign Companies that have met with any loss due to defects which have developed in plank furnished them or constructed with the knowledge of the Light Co, can demand remuneration amounting to thousands of dollars. I do not see that your claim is any better than theirs.

Very truly Yours
Chas. L. Clarke

1883-12-(67)

Ask Clarke why he puts
2 levels on the ampere meter
& without levelling screws.
The person indicated has
levelling screws —

1883-12-13

Mr. Vail's note will explain the
packing you need and you can
judge the quantity.

C. K. Kellogg

THE EDISON ELECTRIC LIGHT CO.
ENGINEERING DEPARTMENT.

1883-12-18

The Edison Electric Light Co.

To the Fredrickson Co. Dr.

1883
Dec 18

To 46.00 Mr. S. R. Smith's Rent for 12 months
Oct. 13 to Dec. 1883

39 90

\$39 90

Approved
C. K. Kellogg

RETURN BILL AND VOUCHER.

This is on Office - also drawn

number 1111
Received 1111

1111

1883-12-22

New York, Dec. 22 1883

Mr. Edison,

Now that the types of the new dynamos are finished I will answer questions contained in letter.

Use the (S) 200 light machine as the foundation for both dynamo and motor.

Wind each magnet core of both dynamo + motor with 715 turns of No. 22 B.W.G. ($\frac{28}{1000}$ " diam.) and connect cores in series, making total magnet resistance 1430 ohms.

Wind the armatures as follows

10 loops

1 wire per loop

64 commutator blocks

Wire 16 B.W.G. ($\frac{65}{1000}$ " diam.)

2 1883-12-22

New York,

188

The resistance of armatures will
be about 2.52 ohms at 150°F .

Make the size of the conductors
to give 3.6 ohms resist. for conductors only.

The dynamo to run at 1300 revs.

Motor at 1170 revs. when fully
loaded.

Maximum safe current on line
18 amperes.

E.M.F. at dynamo terminals 1100 volts.

Counter E.M.F. of motor when fully
loaded 990 volts.

Provide for 35 H.P.

Expect maximum available 20 H.P.

Chas. L. Leckie

ELECTRIC CO.,

1883-12-(00)

Chadwick =

Of course we must do Mr. Edison
the right thing for Chadwick - 65-
and as we do not need him
I tried to get him in with Coles -
Σ

FROM

THOMAS A. EDISON,

NO. 65 FIFTH AVENUE

New York

Meudo Park

-Lds

-Gen.

188

(1883)

EDWARD H. JOHNSON,

LONDON ENGLAND.

Clarke -

Respectable down stairs. Will you please fix up
all the lights in Oldy full blast for some
time or other = also can you arrange
it to have lamps at Saloon brightened up
a little. I don't want to change lamps for
lower volts if can help it &

Edison

Mr. Edison,

(1883)

OK
I am at work in the rectifying
of the answers of Grouse & Grant for fully a
half of each day. The time I take is due
to the fact that I am writing out a full
account of my reasons for my results
and give the full authority either from
book or our experiments as is necessary.
I wish my answers and the reasons
to answer as a standard of information
for learners who are yet to come. I also
give curves.

C. L. Carter

Mr. Tator

(1883)

Please order for Engineering Dept.

2 doz #6 H. Siberian Artists Pencils

1 " 4H "

2 " #3 Faber's Hex Pencils

+ 2 " #4 "

1 " White Conte Crayons

1/2 " Sponges Rubbers 2 x 4

1/2 " Faber's Soft eraser medium size

Knuffel's
Eraser

1/2 doz Boy's Mc Gill's Flat wire staple binders No. 1

1 Large Eraser

6 Bottles Eucalypti Perfumed Paste (large bottles)

Campbell

Wm. J. G. Hadley,

#304 Second St.-

METER.		No. 19		Size 25 lb.		LAMPS.		No. 29		Size 16 c.		Side A		REMARKS.	
														Meter in Hallway, under stairs. near steam pipe	
		JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.		
A	Grammes Out.	43679	41.190												
	Grammes In.	41.283	39.076												
	Loss.	2.396	2.114												
B	Grammes Out.	44772	44.180												
	Grammes In.	42.386	44.210												
	Loss.	2390	-030												
Mean Loss.		2393	2.114												
Amount Bill.		\$33.50	\$29.60												
Remarks.		to hall, set it up - not to be used - my fault for not telling you not to use it from before first													

4c.

Copy sent to Mr. B
#668- 12/19/83

(1883)

Give Specifications and Estimates to
supply light to Blocks 44, 46, &
47 each separately, also Blocks 48,
49 & 50 in the aggregate.

(1883)

Table 2.00
Brickwork 2.50
Stationing Brickwork 1.00
Fallings 2.50

Engineering
Cannoning
Masonry

Chap. Lt. Co.

(1883-08-09)

Amper meter for load



Amper meter for load



RECEIVER



1883. Electric Light - Edison Electric Light Company - Testing Department (D-83-030)

This folder contains correspondence and other documents relating to the testing of dynamos, meters, and other equipment. Much of the correspondence is by William S. Andrews, head of the testing department, which was located in the Edison Machine Works.

All the documents have been filmed.

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

New York, Jan 3rd 1883

Thos. A. Edison Esq.

Dear Sir

Using K. dynamo with field
pieces cut away and regular
armature, I find little or no
difference with regard to sparking
at point of greatest E.M.F. but
the brushes do not need to be
moved quite so far over to find
the non-sparking point —
The difference of position is
however but little — about 1/8 inch.
I will try the new brushes
this afternoon and report to
you thereon.

Yours truly
W. S. Andrews

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-01-05

New York,

Jan 5th 1883

Thos. A. Edison Esq,

Dear Sir,

The device you sent here for reading E.M.F. is not at present sensitive enough for it requires a difference of ten volts to move it one way or the other — I tried it with the keeper close to magnet and at different distances away from it. Say at 100 volts, the keeper would be up, then at 105 and thereabouts, it would remain either ~~up~~ up or down, and at 109 or 110 it would be down. Perhaps if the beam worked between centers it would respond better —

I have lately modified one of our pressure indicators, doing away with the small relay, and the three resistance coils, and simplifying the instrument throughout —

Yours for

1883-01-05

New York, ... 188

two or three days here, and found that
it worked well and regular within a
margin of two volts. So yesterday I
sent it down to the Central Station
with a note to Mr Cacho, and Mr Weston
will give it a thorough test down there

I have arranged it so that there is
only an occasional and very minute
spark between the contact points of
large relay, so it ought to keep in
adjustment for a long time

Yours respectfully
W. S. Andrews

I will send the lever Indicator up to
Bergmann's on first opportunity

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-61-c9

New York,

Jan 9th 1883

Thos. A. Edison Esq

Dear Sir,

I made a further test this afternoon on the 350 Light Dynamos. It was started at 12.30 P.M. and it ran continuously up to 4.30 P.M. It carried from 240 to 350 Wbs. on Lamp circuit and about 30 Wbers more on Field circuit - making in all about 280 Wbers, which was a heavy load, but on close of test, I found the armature to be not unusually warm, Commutator was hot, but not dangerously so - Its temp. was not up to boiling water. Field magnets were just warm, - bearing comparatively cool all the time of running. I measured the current required by some of the old and new lamps, and send you a copy of test on another sheet.

Yours resply, W. S. Andrews -

12

Analysis lists
Smith wire

Saml. J. Russell Esq.
Care of West 4th Ave. City

Dear Sir,
The house letter is the same
of a No. 10. Copper
Wire from W. S. G. Smith
And, Enclose report
Yours truly
M. S. Andrews

THE EDISON ELECTRIC LIGHT CO.,
15 FIFTH AVENUE.

New York,

1883

Test on *Coiled* *1040* *Copper*
Wire *Specimen* *M. S. R. Smith*.

Length tested = 8 feet
Actual diameter = .0825 inch.

Resistance at 60° Fahr. = 290.5348 ohms

Resistance of same length

and size of *Specimen* *Copper* = .005292 ohms

Wire at 60° Fahr.

Percentage of conductivity = 98.95

M. S. Andrews

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

1883-01-26

New York,

Jan 26th

1883

Thos. B. Edison Esq.
Dear Sir -

I tested the pair of wires, wired
on a dynamo today with a load
of 250 "a" lamps at about 110 Volts -
The brushes were set at the point of
greatest E.M.F. For about a minute they
carried the load well, then they began
to heat up and spark - About a
dozen wires in each brush became
red-hot throughout their length, and
white-hot at point of contact with
commutator. These of course heated
the shorts, and transferred the
heaviest part of the work to other
wires, which in turn became red-hot
as the others cooled down, and so on.
The scintillations and fused drops of
wires, heated and blackened the

1883-01-26

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

New York, _____ 188

Commutator considerably, so that it had to be continually cleaned off with emery paper - The pressure of brushes against Commutator was kept as light as possible, but when the wires were red hot, it was sufficient to bend the ends much out of shape. Continued the test for 15 minutes, ^{without} increasing the load, by which time the brushes had burnt away about 1/4 inch and as the commutator was very hot, the dynamo was stopped - I send ~~you~~ ^{of} the brushes with this report, so that you may examine ^{them} ~~the~~

Yours respectfully,
W. S. Andrews

June 25th/83

Test made on 55 Volt. D. Dynamo with
a Load of 1100 (8½ H.P.) "A" Lamps. Ran
for four hours, and took the following
readings:—

Speed	923	925	925
E.M.F. at Dynamos	57	59.5	59
" " Beginning of Lamps	54	56	56
" " end of Cable—	53	55	55

Cable connecting dynamo to main line very hot
and smoking

Back end of armature very hot, and smoking

Commutator end of armature not so hot—

Commutator not dangerously hot

Brushes worked well without sparking—

1883-03-06

Testing Room 104 Green St
March 6th 83

Thos. A. Edison Esq 769

Dear Sir

I have today made a test on the new 40 light dynamo, and I send you a copy of two readings taken -

The cores of field magnet have been cut 6 in. shorter, and 25th of No 28 wire is wound on each of the four legs. I have connected it up like an ordinary "L" which makes the resis. about 50 ohms, this gives about 5 or 6% loss of total current in field.

I expected to have sufficient C.M.F. at about 1800 revolutions per min, but find that it will have to go about 1950 or 2000

Up to present time it has run very well, bearings - commutator and armature quite cool - Mr. Swan is very anxious to know if it may be considered all right, so that he may go ahead

Yours respectfully
W. S. Andrews

1883-03-06

Testing Room, 104 Green St
Mar 6th 88 -

Wm. A. Edison Esq.

Dear Sir,

I have today made a test on the new brushes. They were tested on a K. Dynamo with 250 (86 H.P.) "C" Lamps, and were in every case set down to the point of Greatest E.M.F.

The Copper Wire Brushes.

Sparked but little, and ran very cool, but they required watching and occasional shifting to keep them working right. The commutator remained smooth, and did not heat.

The German Silver Wire Brushes.

At first sparked less than the Copper ones. That was, when the commutator was in thoroughly good order, but the same fault soon developed, that has been noted in former tests on German silver brushes viz. the heating up of several wires to a red heat, thereby putting the brush out of shape, and heating and cutting the commutator.

The last kind of German silver and Copper brushes work better than any

1883-03-06

hitherto tried, owing probably to their large radiating surface - and of the two, those made of copper have some advantage -

I would suggest that for a set of each kind, (Copper and German Silver) could be tried on a "C. dynamo at Central Station on the Test line" - ~~such~~ good results might ensue from such a test -

Yours respectfully

W. L. Andrews

P.S. The Iron Wire Brushes do not work so well as either the Copper or German Silver - They produce more spark, apart from the scintillations of the iron, and they heat the commutator and roughen it

No. _____

THE EDISON ELECTRIC LIGHT CO.,

TESTING DEPARTMENT

Report of Test of Dynamo No. _____

Class _____

Date of Test Mar 6th 188 3

Duration of Test _____ hours _____ min.

Armature Resistance . 21 ohms.Magnet Resistance 50 "Base { Armature very high "
Magnet _____ " "Revolutions pr. minute 1940No. of Lamps 40 (86674P) 2"E. M. F. at Dynamo 105 volts." " " Lamps 104 "

Lamp in Photometer _____ "

Candle power _____

Extra Resistance in Field _____ ohms.

Remarks:

Signed, _____

No. _____

THE EDISON ELECTRIC LIGHT CO.,

TESTING DEPARTMENT.

Report of Test of Dynamo No. _____

Class _____

Date of Test Mar 6th 188 3

Duration of Test _____ hours _____ min.

Armature Resistance . 21 ohms.Magnet Resistance 50 "Base { Armature very high "
Magnet _____ " "Revolutions pr. minute 1930No. of Lamps 40 (86674P) 2"E. M. F. at Dynamo 105 volts." " " Lamps 104 "

Lamp in Photometer _____ "

Candle power _____

Extra Resistance in Field _____ ohms.

Remarks:

Signed, _____

Approved, _____

THE EDISON ELECTRIC LIGHT CO.,
43 FIFTH AVENUE.

New York,

1893-03-08
March 8th 1893

Thos. A. Edison

Dear Sir,

I put 60 8 $\frac{1}{2}$ to 11 P. Lamps on to
small dynamo, and took the following

Readings

Speed = 2030

E. M. F. at Dynamo = 115 Volts

Current in Lamp Circuit = 55 Amperes

Current per Lamp = .915 Ampere

With this load I could not help the
brushes sparking a little, but I ran
the dynamo for 4 hours, and at the
End of run found:—

Brushes cool
Commutator warm and cut a little
Armature hot, but not dangerously so
Field magnet warm

Yours truly
W. J. Neumann

THE EDISON ELECTRIC LIGHT CO.,
25 FIFTH AVENUE.

1883-03-08

New York,

Mar 8th

1893

Mrs. A. Edison Esq

Dear Sir

I made another test this morning on
the New Model small dynamo, and
send you particulars

Load 40 "a" Lps (86.6 H.P.)

E.M.F. at 54° 109 Volts

Speed 1840 revs min -

Amps in Lamp circuit at

100 E.M.F. -

14.0

Amps in Field circuit -

Total current in Amps = 41.0

Escape current p Lamp 8.5 Amps

Loss of Total Current in field nearly 19%

Ran for 1 Hour - Magnet a little
warm. Armature cool - Commutator
cool and in good order - Bearings
Quite cool - over

2

1883-03-08

New York: 188

Speed 2100 μ min —
Load 40 "a" lamps (86444)
E.M.F. at 54 = 118 Volts —

Amperes through lamp circuit	}	37.0
in solenoid circuit		
Amperes through three solenoids		8.5
Total current		44.5

Coverage Current / bank } 11/11/11
at 11.000 }
Loss of account in field 11/11/11

Run for 1 Hour - Conditions
Same as on last page -

over

Speed = 2000 μ min -
Load = 55 (846 H.P.) a" lbs
E.M.F. at 54 = 108 Volts

Temperatures in Lamp chamber }
at 10' to }
Temperatures in Lamp chamber }
Total current in Lamp } 54.00

Current in Lamp } 54.00
Loss of current in field } 18%

Ran as above for 1 hour, and at
End of run, bearings were found to be
quite cool - armature only slightly
warm - Field magnet cores warm

W. S. Auden

Field Magnet bearings warm - 100° F.

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1283-C3-12

New York,

March 12th 1883

Mrs. A. Edison Esq
Dear Sir,

I have made an 8 Hour test on small dynamo today with a load of 55-8 $\frac{1}{2}$ H.P. Lamps - Field magnet cores all in multiple arc - ω is - about 15 $\frac{1}{2}$ ohms. With 2000 Revolutions it gives 108 Volts. Carrying above load - The E.M.F. with no lamps on line at 2000 Revs is about 140 Volts. - Volts were measured across terminals on dynamo in both cases. At the end of the 8 Hour run, the bearings were cool - Field magnet cores warm, and ~~armature~~ the hand could easily bear the heat of armature.

If I could only run it without spark on commutator, I think the dynamo would carry 60 Lamps safely.

1883-03-12

THE EDISON ELECTRIC LIGHT CO.,
65 FIFTH AVENUE.

New York, _____ 188

The sparking is not very bad, but is enough to roughen the commutator in a long run, and any increase of load makes it worse — the brushes only touch $1\frac{1}{2}$ blocks on commutator — so there is very little local short circuiting.

Thinking that field blocks were rather light for size of armature, I put a plate of cast iron, about 1 in. thick, on the outside of each field block but this dropped the E.M.F. from 108 volts down to 100 volts — Would not this experiment seem to imply that light field blocks are better than heavy thick ones? — I wish you could make it convenient to come down to Greenwich St. and see this Dynamo at work — Yours resply,
W. S. Andrews

THE EDISON ELECTRIC LIGHT CO.,
30 FIFTH AVENUE

New York,

1883-03-14
Mar 14th 1883

Thos. A. Edison Esq

Dear Sir,

I have just made a test on
the 3 Dynamos with 4 short cores
connected like an "L"

Revs. of magnet — 10.5 sec
Revs. of Armature (ordinary 55 lb. L^y) — .035 sec
Load — 120 (86 H.P.) a Lamp
Speed — 1240 rpm
E.M.F. at Dynamos 107 Volts

Notwithstanding the above good results
there is a heavy loss of magnetism
by reason of the shape of field
blocks — Mr. Clark thinks that
by modifying armature ^{the shape of field blocks} it could
easily be made into a 150 lb
Dynamo, without any extra wire
or iron — Armature cool at end of
✓ Hour's run Yours respy W. S. Andrews

THE EDISON ELECTRIC LIGHT CO.
35 FIFTH AVENUE.

1883-03-22
New York, March 22nd 1883

Prof. J. Edison Esq.

Dear Sir,

I tested today the new insulated
brushes with long german silver strips
attached — I used a K dynamo with
250 (1054.12) "a" lamps at about
100 volts — The spark developed was
less than with any brushes hitherto
tried, and the wires kept their form
and worked well generally. They
were of course, as before, put at
point of greatest E.M.F. on commu-
tator — The german silver
strips became in a short time
very hot, and the insulating tape
wound around them smoked and
was partially carbonized — I would
suggest that strips of sheet iron

might be used, kept apart at intervals
by casting a little block of plaster of
Paris round them as was done with
some of the brushes. Thus the heat
would have a chance to radiate
and the cost of brushes would be
lessened — I ran the brushes for
~~about 1 hour every 1000 and read numerous~~
The commutator was cut somewhat
at close of run, although the spark
was very little. I think these
brushes are very good, at any rate
they are the best yet, and it would
be quite worth while to have a
set made and tried on test line
at Central Station

Yours truly,
W. S. Andrews

1883-03-24

New York,

Mar 24th 1883

Thos. A. Edison Esq

Dear Sir,

Referring to your letter of present date, the 10 to 14? lamps used in bush Experiment, average about .62 Amps per lamp at 105 Volts, therefore the 260 lamps used would approximate a load of 160 Amps through bushes -

The resis. of each bush (measured by Wheatstone Bridge as close as possible) is .009 ohm, therefore

$$\begin{array}{rcccl} \text{Amps} & \text{ohm} & \text{Volts} & & \\ 160 \times .009 & = & 1.44 & \text{Drop of EMF on} & \\ & & & \text{each bush} & \end{array}$$

The drop on the two bushes would be 2.88 Volts out of 105 (at 87 name) or nearly 3% loss

Yours truly
W. S. Andrews

160
24.2
12.1
12.1
12.1
12.1
12.1
12.1
12.1
12.1

THE EDISON ELECTRIC LIGHT CO.,
25 FIFTH AVENUE.

New York,

1883-04-03

April 3rd 1883

J. A. Edison Esq.

Dear Sir

I have just tried the experiment with
the 3 Dynamo that has been bored out
to give $\frac{1}{4}$ inch clearance between field
and armature - Load 45 lamps
(8 1/2 HP) - With field in series, Revs
40 ohms

1200 Revs gave 108 Volts

With field multiple arc - Revs = 10 ohms

1200 Revs gave 114 Volts

The 4 short core dynamo with a
field of 40 ohms and 120 lamps
gave with

1200 Revs. 98 Volts -

Yours truly

W. J. Andrews

I have just tried the experiment with
the 3 dynamo that has been bored out
to give $\frac{1}{4}$ inch clearance between field
and armature - Load 45 lamps
(8 1/2 HP) - With field in series, Revs
40 ohms

12 THE EDISON ELECTRIC CO. FIFTY

New York, Apr 9th 1883

Thos. C. Carson Esq

Dear Sir

I have just made a test on the small dynamo with six cores in field magnet. In the last test that I sent you of this machine, the armature was wound with ^{Paley's No. 30}
Gardner & Sons' round wire - It happened so
~~went too much under the influence of oil.~~

Watts. Load connected as in a 110 Volt K
res. = 22.4 ohms

Load in St. BAP. Lumps	Speed	Eff. % at 8 ft. max
75	1640	87
"	2020	104
"	2090	107

I ran it for about an hour at about 105 Volts, but the armature, owing to its very low resistance, showed no sign of heating at the close of run - hardly warm

I think that the armature has been made unnecessarily low, at expense of E.M.F.

We ought to ~~to~~ keep to the three turns second armature, as at first, and put only two or three more wires in, and then we should avoid the very high rate of speed —

I corrected the field ~~to~~ multiple arc, reducing its wires to about 5. phs, and then with same load I got —

Speed	E.M.F. at 5 phs
1590	95 Volts
1670	100 "

But the loss in field would be altogether too much —

Yours Resp
W. S. Andrews

With armature of present wires this 8 phs would carry 100 8th C.H.P. lamp easily, I think, but this load is quite out of proportion to the size of shaft —

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

New York,

7883-67-43
Sep 13th 1883

Prof. A. Edison Esq.
65 5th Ave.

Dear Sir
I am testing the small dynamo this morning and send you the following readings which I took whilst the dynamo was carrying a load of 100 8 $\frac{1}{2}$ 6 H.P. lamps.

Speed	1850	1810
-------	------	------

Volts at 54" 105 103 -

The armature keeps quite cool but the field magnets (Cotnam's) are very hot - By rewinding field with finer wire, the armature might carry 125 lamps, as at present there is such a heavy loss in field - I will continue test and report results

Yours resply W. W. Andrews

THE EDISON ELECTRIC LIGHT CO.,
25 FIFTH AVENUE.

1883-04-13

Keep the test up
New York, April 13th 1883

Dear Mr. S. Edison Esq. 3 code field ready
ps. see the field raised
65 Fifth Ave City

Dear Sir,

I ran the small dynamo for 4
or 5 hours today with a load of
100 - 8 1/2 to 11.0 lamps - The field coils
(Revised chart, maximum today) became very
hot, but the armature was not abnor-
mally so. The brushes sparked more
than they should have done, but
this was probably due to the fact,
that owing to the form of brush-
holder, the brushes had to be set
very short, so that there was little
spring in them - The armature is
certainly good for 100 lamps, especially
when resist. of field is increased by
different winding
Yours resp
W. S. Andrews

1883 504-16
THE EDISON ELECTRIC LIGHT CO.,
20 AVENUE,
New York.

Andrew

Thos. W. Edison Esq.

Dear Sir,

I will continue tests
on the E. Dynamos, as oppor-
tunity offers.

The field is not raised
up from base, excepting by
the ordinary zinc plate

Yours truly,

W. J. Andrews

Evidently if
it were raised
up we should do
much better as
to volts

17 1883-04-18
THE EDISON ELECTRIC LIGHT CO.,
20 AVENUE,
New York.

THE EDISON ELECTRIC LIGHT CO.,
20 AVENUE,
New York.

Andrew

Thos. W. Edison

65 4th Ave (Ct)

Dear Sir

Referring to your letter
of yesterday's date in the
matter of E. Dynamos.

Shall I have the field
blocks raised higher off
iron base than they are
at present? This would
undoubtedly increase the
power of machine.

Yours truly,

W. J. Andrews

After you have finished
the long test, then raise
to what extra volts you get

THE EDISON ELECTRIC LIGHT CO.,
45 FIFTH AVENUE

New York,

1883-04-21

April 21st 1883

Mr. A. Edison Esq

65 Fifth Ave. City

Dear Sir,

I will attend to the test on C
Dynamo as per your letter of yesterday,
as soon as possible —

What am I to do with the pair
of large imitated copper brushes
received yesterday? They are
intended for a C Dynamo, and
I cannot test them here on a
smaller one —

I have made a test today
on the 450 Light Dynamo —
The field measures about 8 ohms,
Connected like an ordinary 110 Volt
K Dynamo — The armature measures
0.15 ohm —

With a load of 450 "a" Lamps
(85 b.H.P.) I took the following

Readings: -

Speed	E.M.F. at Dynamo
1120	105 Volts
1140	107 "
1160	109 "

Drop of E.M.F. from Dynamo to end of
Cable = 3.5 Volts

Ran for about 4 Hours with above
Load, - Armature was quite hot
Commutator & bearings cool, Field
Coils just warm - I wish we
could have got one more wire
round armature, which would
have reduced its resist. to about
.012 ohm; It would then carry
450 lamps easily - As it is
I think that number makes

rather a heavy load for it^x —
— I expect to continue the test
all day Monday — and will then
send you another report

Respectfully Yours
W. S. Andrews

* Especially when used for small
Central Station purposes, which
means I suppose 24 Hours a day
For this work I think 400 lamps
are all that can be safely
counted on with present armatures

Can't another one be put on —
= In Village plant station I will
only have to carry 450 for 3½
hours before the load
out ½ 450 =

1883-04-23

THE EDISON ELECTRIC LIGHT CO.,
45 FIFTH AVENUE.

New York,

April 23rd 1883

Mr. C. Edison,

65 Fifth Ave. City

Dear Sir,

I found today, by actual count, that there were about 30 lamps short of 450 in Saturday's test on new dynamo. On making up the full complement, in today's test, the total fell short of course. I do not think that the field magnet is anything like saturated, so tomorrow I shall connect all the cores in multiple arc, and make another test, about which I will report.

Yours truly,
W. S. Andrews

DYNAMO TEST.

1883-04-23

THE EDISON ELECTRIC LIGHT CO. TESTING ROOM.

Type *450 Light* No. _____ New York, *April 23rd* 188*3*

Speed of Armature	Lamp Load	Candle Power	AMPERES <i>through lamp</i>	Armature Resistance	Field Resistance	ELECTRO MOTIVE FORCE		
						On Lamps	At Dynamo	On Field
<i>1165</i>	<i>450</i>		<i>380</i>	<i>.015</i>	<i>7.75</i>	<i>98.5</i>	<i>100</i>	<i>100</i>
<i>1190</i>	"		<i>387</i>			<i>100.5</i>	<i>102</i>	<i>102</i>
<i>1235</i>	"		<i>406</i>			<i>103.5</i>	<i>105</i>	<i>105</i>
<i>1245</i>	"		<i>415</i>			<i>106.5</i>	<i>108</i>	<i>108</i>
<i>1030</i>	<i>None</i>						<i>116</i>	<i>116</i>

ARMATURE.

FIELD MAGNETS.

Length of Face	<i>30 inches</i>	Cores	<i>6</i>
Diameter, Outside	<i>10 1/2 "</i>	How Connected	<i>3 pairs in multi arc</i>
" of Iron Core	<i>9 1/2 "</i>	Average Resistance of Ea. Core	<i>11.62</i>
Size of Wire, B. W. G.	<i>No. 16</i>	Total Magnet Resistance	<i>7.75</i>
" " Outside Insulation	<i>.085</i>	Size of Wire, B. W. G.	<i>No. 17</i>
Number of Loops	<i>1</i>	" " Outside Insulation	<i>.068</i>
No. of wires per loop	<i>7</i>	Weight of Wire on Ea. Core	<i>40 lbs</i>
No. of Commutator Blocks	<i>44</i>	Layers of Wire on Ea. Core	<i>about 6 1/2</i>
Clearance bet. Armature and Field	<i>3/16</i>	Convulsions per layer	
Temperature of Armature		Length of Iron Core	<i>25 inches</i>
Temperature of Room		Diam. " "	<i>7 "</i>
Diagram	<i>None</i>	Remarks	<i>116 118</i>

*Lamp fused when 8 1/2 A. H. P.
Ran for about four hours
Commutator hot*

*15 183
15 182
11 16
11 12*

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-04-24
New York, April 24th 1883

Thos. A. Edison Esq
65 5th Ave. City

Dear Sir

I send you some notes I have written out today on the 450 Light Dynamand - I think that the armature with present resis. .015 would carry 450 lamps for $3\frac{1}{2}$ hours or more, but in case you see fit to reduce its resis. of course it will run cooler, and would be good on a pinch for 500 lamps for a short time. In any case I would not unwind the ~~present~~ armature until we have tried one of lower resis.

Yours truly
W. S. Andrews

1883-04-25

Test on G. Dynamo - Apr. 25th/83

Field magnet built up of 4 Cores -

Resis of each core 45 ohms -

Connected - Two pairs of Cores in Mult are

Total Resis = 45 ohms

Load 100 8 $\frac{1}{2}$ BHP Lamps

Speed	E.M.F. at Dynamo	Amps
2250	105.5	91
2290	106	92
2300	106.5	94

Ran for three hours, armature quite cool

Connected all the cores in mult are

Resis = 11.3 ohms -

Speed	E.M.F. at Dy.	Amps
1815	104	95
1825	104	95
1880	112	98

percentage of loss in 45 ohm field = 2 $\frac{1}{2}$

" " " 11 " " = 10

1883-04-25

Notes on 450 Light Dynamos—
April 24th/83—

This morning I connected all the cores of this dynamo in multiple arc, reducing the res. of field from 7.75 ohms to 1.94 ohms, and found the strength of field to be very greatly increased.

To make up for increase of loss in field (about 45 lamps extra) I reduced the number of lamps to 400, and took the following readings:—

Speed	E.M.F. at Dynamos
880	94 Volts
910	102 "
940	106 "

Each core of this dynamo is now wound with 40th of No 17 wire (diam = .058" Resis. per ft = about .3 ohm). If the cores were wound with the same weight of No 19 wire (diam = .042" Resis. per ft about 1 ohm) the strength of field, with same connections, would

1883-04-25

remain about the same, but the resis. would be raised to about 6 ohms. Seeing now that we can get 106 Volts with 940 Revs., we can afford to reduce the number of divisions in armature, to allow of the admission of one more wire in each layer

○○○○○○○○ - 1 wire in
 ○○○○○○○○
 ○○○○○○○○
 ○○○○○○○○

By putting 40 Blocks in Commutator instead of 44, this may be done and the resis. of armature will accordingly be reduced

$$\frac{40}{44} \times \frac{14}{16} = \frac{35}{44} \text{ and}$$

Present resis. of armature being = .015 ohms

$$.015 \times \frac{35}{44} = \text{nearly } .012 \text{ ohms}$$

and with this resis. it would carry 450 lamps easily

With 940 Revs. the E.M.F. would then be reduced to $\frac{40}{44}$ th of what it is at present with 44 bars in comm^t (or to about 96 Volts), but by raising the revs. to 1100 we should get about 110 Volts

1883-04-25

Test of E. Dynamic Cont-

With a load of 125 Lamps (80 HP)
 Field still in multiple arc = 11.3 ohms.

Speed	E.M.F. at Dry	Amps.
1885	105	106
1935	110	112

percentage of loss in field about 8.8

1883-04-24

Of course the foregoing figures can only be taken as a rough approximation of results, but there is a margin of 100 revs to work on.

W. L. Andrews

THE EDISON ELECTRIC LIGHT CO.,
45 FIFTH AVENUE.

1883-04-26

April 26th

The 11 Res field will
L. A. Edison Engrs

Dear Sir Edison

Please let me know
which way you want the
field connected - Whether
you wish with small
percentage of loss in field
and high speed, or larger
percentage of loss in field
and lower speed

The armature is absolutely
safe to carry 100 lamps

Yours truly
W. S. Brown

~~Let me see results
both ways.~~

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

12,883-04-27

April 24th 1893

Arriving

Mr. J. A. Edwards
105 Fifth Ave. City

Dear Sir,

I made a test this afternoon
on 100 Light Dynamos with felt
blocks raised on wooden blocks
4 1/8 in. and found a gain
thereby of about 200 Amps
I shall test again tomorrow
with other thicknesses of
blocking, and will send
you a full report

Yours truly
W. J. Andrews

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

1883-04-28

New York,

April 28th 1883

Thos. A. Edison Esq
65 5th Ave City

Dear Sir,

I have completed the tests on
100 light dynamos with raised field
blocks and send you results on
another sheet, which I believe to
be practically correct. Mr. Brown
thinks it will be best to take the
mean of the three, and raise the
magnet about $4\frac{1}{2}$ in from sole-plate.
Raising it even thus high will
necessitate quite a heavy ginc. plate.

Yours very truly
W. S. Andrews

1883-04-28

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

New York,

April 28th 1883

Test on 100 Light Dynamos —
 Field resist = about 11 ohms
 Armature resist = .04 ohm —
 Load 125 ($8\frac{1}{2}$ $\frac{1}{2}$ HP) lamps

Speed ft. min.	E.M.F. at Dyn. ^a with magnets raised 1 $\frac{1}{4}$ in. from crown Base —	E.M.F. at Dyn. ^a with magnets raised 4 $\frac{1}{4}$ in. from crown base —	E.M.F. at Dyn. ^a with magnet raised 6 $\frac{1}{4}$ in. from crown base —
1900	108 Volts	115 Volts	119 Volts
1784		108 "	
1717			108 "

1883-05-08

New York, *May 8th* 1883

Thos. A. Edison Esq.
65 5th Ave City
Dear Sir

I have figured out an armature
that I think will be good for
25 "a" lamps, and send particulars
on another sheet. If this one is
first built and tried, it will be
easy to figure with certainty on
a fifty light armature.

Has Mr Clark spoken to
you on the subject of my going
to England? My Father's health
is in such a precarious state
that I feel it will be my duty
to go over and see him as soon
as I can be spared -

I do not calculate to be away

1883-05-08

THE EDISON ELECTRIC LIGHT CO.,
© FIFTH AVENUE.

New York, _____ 158

for more than a month, or say
five weeks at the longest, and
should feel much obliged if you
would kindly tell me, when
you think I can leave with
least inconvenience to the general
work going on —

Respy Yours
W. S. Andrews

1883-05-08

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUENew York, May 8th 1883Armature for 25 "a" Lamps

Length, enclosed by field magnet = 8 inches

Diam. outside wire = about 6 in

Diam. of iron core = $5\frac{7}{8}$ inches

No. of divisions = 34

Size of wire = .042" uncovered and about .05" covered

No. of loops = 6. Wires per loop = 4

Thickness of dividing teeth = .05"

Superficial measure of armature
 (only the cylindrical part enclosed
 in field) } about
 160 sq. in.

Calculated Pies = about .18 ohms.

Foot pounds per sq. in. of armature
 surface about 30 (?/ counting 160 sq. in.)

W. S. Andrews

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

1883-05-12

New York, 12 May 1883

Thos. A Edison Esq
65 Fifth Ave City

Dear Sir,

I made a short test this afternoon
on the 450 Light Dynamo with short
Cores, that have been re-wound with
65th No 16 wire on each Core -

I send you results on another
Sheet. The dynamo does not show
as great an increase of Eff^t as I
expected, and after about an hour's
run, with an average load of
405 Amps or 450 lamps (.925
per lamp) the armature was quite
hot. I shall continue test all
day Monday, and will report
Results

THE EDISON ELECTRIC LIGHT CO.

Yours Truly
W. S. Andrews -

1883-05-12

THE EDISON ELECTRIC LIGHT CO.,
25 FIFTH AVENUENew York, 12th May 1883

Test on 450 Light Dynamos.

The field cores have been re-wound
with 65 lb of No. 16 wire on each
Core—

Resis. of field, Connected in series
(like ordinary K) = 9 ohms—

Average resis of each Core = 13.5 ohms—

Arm resis = .015 ohm—

Speed	Equivalent load		Volts	
	Load in Amperes through lamps	Equivalent load in lamps .9 Amp. ea.	At 100 amps	At 100 amps
1205	415	461	105	102
1250	390	434	110	107

W. S. Andrews

THE EDISON ELECTRIC LIGHT CO.,
25 FIFTH AVENUE.

RECEIVED
MAY 21 1883
ANSWERED

New York,

1883-05-18

May 18th 1883

.....185...
FILE No.
Thos. A. Edison Esq.
65 Fifth Ave. City

Dear Sir

I send you a test made today
with 55 Volt Larmature - I ran it
for about 4 Hours with an average
load of 275 8^{1/2} taper lamp. The
armature was then smoking hot
and the soldered connections began
to run - It would not have lasted
half an hour longer -

Yours truly
W. S. Andrews

1883-05-18

Comparative test of a 55 Volt L Armature
in an L Field with different cores
Resis. of arm - .017 ohm -

Quantity of wire each core -	Size of Iron Core	Method of Connection	Total Res. of Field	Speed	Volts at Dynamo	Amps.	Equi- v. Load 1900
32 ¹ / ₂ lb No 14	6 in	all cores in mult are	ohms 2.69	1200	101	220	239
				1400	107	200	217
				1280	102	180	197
65 lb No 14	6 in	2 pairs multiple are	ohms 20	1375	94	214	233
				1385	98	216	235
65 lb No 14	6 in	All cores in mult are	ohms 5	1485	112	260	283
				1400	110 ¹ / ₂	258	281
				1380	109	252	274
				1345	104	239	260
65 lb No 16	7 in	all cores in mult are	ohms 3.4	1100	105	236	257
				1065	99	265	288
				1155	105	252	275
65 lb No 16	7 in	2 pairs in mult are	ohms 13 ¹ / ₂	1270	106	244	265
				1255	106	245	266
				1340	111	260	282

THE EDISON ELECTRIC LIGHT CO.

NEW YORK, N. Y.

New York,

1883-05-21

May 21

3

Thos A Edison

Dr Sir.

Enclosed find
test made to day on 400 Light Squares.
The brass pulley seemed to reduce the
pull of the magnets about one half
so that the regular step was strong
enough to use.

We then moved the magnets about
 $\frac{1}{4}$ in. toward the pulley, where the
pull almost disappeared so that it was
run without any step for about
30 minutes.

Yours re

L. L. Edgar
Testing Room.

THE EDISON ELECTRIC LIGHT CO.,
370 BROAD AVENUE

New York.

1883-05-21

May 21

1883

Comparative test on 450 Light Dy.

With iron pulley

Speed	Volts at by	Ampires.
1085	105	411
1205	105	415
1090	105.5	413
1250	110	390

With brass pulley.

1090	105	398
1070	104	398
1250	106	402
1250	105	410.

The magnets were then moved $\frac{1}{4}$ in
toward pulley and the following
test made.

1125	103	391
1180	105	400

^{12.}
May 23, 1883

Edison Mach Works

Testing Dept.

W. R. Dickson enclosed
design for lamp bracket

them up for the workmen

If you only knew how I am
heart & soul in all your
inventions & all you do
a then stoop to assist
a better my projects in
life

Hoping to hear from
you personally or other
wise. I beg to remain

Yours devotedly

W. Kennedy & Co. Dickson

1883-05-23

Edison Machine Works
RECEIVED
MAY 23 1883
ANSWERED
May 26/83
FILE NO.....
Testing Room
May 23/83

Mr. Edison
Dear Sir

During my
illness of the last few days
I roughly outlined in ink
several designs for lamp
brackets & such like which
I now send for your inspec-
tion. I do not send the
others as I find from
comparing catalogue the
of Bergman that several
are somewhat similar.

I shall soon send you
others & should you like
any of the designs let me
know so as to work them

THE EDISON ELECTRIC LIGHT CO.,
6 FIFTH AVENUE.

New York

1883-06-27

June 6th

1883

Mr. P. A. Edison

RECEIVED
JUN 6 1883
ANSWERED

FILE NO. 188

Dear Sir,

I telegraphed to Cincinnati yesterday after seeing you, to find out if I did not dispense with going there. Rec'd. telegram in reply saying that it was of utmost importance that I sh'd be in Cin. during the next two weeks & urging me to come home.

I now wish to ask that I be allowed to wait until July 1st before commencing work in the meter dept. I regret having to ask it, but it seems unavoidable.

Will you please let me know at below address whether I

can begin work for you as
you suggested, upon July 1st
instead of by the 15th inst.

Shall leave immediately

Yours respectfully
Edward Leonard

Mt. Auburn
Cincinnati
Ohio

43
June 6th 1863
Edw. N. Leonard
16-Gringto Cincinnati

Mr.
T. A. Shaw

THE EDISON ELECTRIC LIGHT CO.,
& FIFTH AVENUE,

New York,

1883-06-15

June 15 1883

C. L. Clarke Esq.

Dear Sir:-

I made
a four hour test on a regular
L. A. dynamo. There was an
average speed of 900 revolutions,
105 volts, and 141 amperes.

The commutator was not in
the best condition, but the
brushes sparked very little
and were about at the
regular height. The arm-
ature did not seem to be
extra warm yet it showed
100° C. The armature was run out
back to be tested and perhaps did
not give as good results as a
new one.

Yours C. L. Edgar

THE EDISON ELECTRIC LIGHT CO.,

NEW YORK

NEW YORK

1893-06-29

THE EDISON ELECTRIC LIGHT CO.

1883

June 29th

Shos A. Edwards Esq
65 5th Ave
City

Dear Sir

I have had both
bearings of small
diameter jewelled, and
am just now testing
it. I think that it
will now be quite
accurate enough for
business purposes, and
I will call at 65 5th
Ave on Monday to see
you about it

Resply Yours
W. S. Andrews

DYNAMO TEST.

1883-02-18

THE EDISON ELECTRIC LIGHT CO. TESTING ROOM.

Type *T 100 light*

New York

July 18th 188

Speed of Armature	Lamp Load	Candle Power	AMPERES	Armature Resistance	Field Resistance	ELECTRO MOTIVE FORCE		
						On Lamps	At Dynamo	On Field
1415	110		110	0.72			113	

3 morning test 9:30 o'clock

1520	110		102				110	
------	-----	--	-----	--	--	--	-----	--

evening test 3:20 4:12

ARMATURE.

Length of Face *13"*
 Diameter, Outside *8"*
 " of Iron Core
 Size of Wire, B. W. G. *042*
 " " Outside Insulation
 Number of Loops *2*
 No. of wires per loop *10*
 No. of Commutator Blocks *60*
 Clearance bet. Armature and Field
 Temperature of Armature *86°C.*
 Temperature of Room
 Diagram



FIELD MAGNETS.

Cores
 How Connected *All in multiple*
 Resistance of Ea. Core
 Total Magnet Resistance *15.3*
 Size of Wire, B. W. G. *no 20*
 " " Outside Insulation
 Weight of Wire on Ea. Core *30lb*
 Layers of Wire on Ea. Core
 Convolutions per layer
 Length of Iron Core
 Diam. " "*5 in*
 Remarks

Ran 7 hours - had gradually ^{diving} to increase speed to keep up volts on an average 109 to 110 volts -

Temperature of magnets 50°C

" " Arm 86°C
Once during the 7 hours test the lamps rose a few units perceptibly -

W. H. Dickson

THE EDISON ELECTRIC LIGHT CO.,
25 FIFTH AVENUE

D 1883 E. 24

Testing Room

New York,

Aug 1st

1883

Mr Insull Secy

Dear Sir,

Am sorry to
have to remind you once
more concerning my salary.

I have thirty dollars
now owing me & am in im-
mediate need of it. If you
will be so good as to attend
to this at your earliest con-
venience & as you suggested,
send it down to the Testing
Room you will greatly oblige
me
Yours Resp^{ly}
Edward Leonard.

DYNAMO TEST.

THE EDISON ELECTRIC LIGHT CO. TESTING ROOM.

1883-08-15

Co. 18" Armature No. *New York, Aug 15th* 1883

Speed of Armature	Lamp Load	Candle Power	AMPÈRES	Armature Resistance	Field Resistance	ELECTRO MOTIVE FORCE		
						On Lamps	At Dynamo	On Field
1010	<i>about</i>		280	0.15	7.76	102	104	
1030	"		298	0.15	"	105	108	

ARMATURE.

Length of Face *18"*
 Diameter, Outside *10 1/2"*
 " of Iron Core *9 1/8"*
 Size of Wire, B. W. G. *# 16*
 " " Outside Insulation
 Number of Loops *1*
 No. of wires per loop *12*
 No. of Commutator Blocks *54*
 Clearance bet. Armature and Field
 Temperature of Armature
 Temperature of Room

Diagram

FIELD MAGNETS.

Cores *"4"*
 How Connected *All in Mult. Arc.*
 Resistance of Ea. Core *31.07 ohms*
 Total Magnet Resistance *7.76 "*
 Size of Wire, B. W. G. *# 17 .058*
 " " Outside Insulation *# 13 .095*
 Weight of Wire on Ea. Core *95 lbs.*
 Layers of Wire on Ea. Core
 Convolutions per layer
 Length of Iron Core *24"*
 Diam. " " *8"*

Remarks

*Raw dynamo about 2 hrs.
 Temp. of Armature not too
 high for safety.*

DYNAMO TEST.

1283-08-16

THE EDISON ELECTRIC LIGHT CO. TESTING ROOM.

Eight 18" Armature No.

New York, August 16th 1883

Speed of Armature	Lamp Load	Candle Power	AMPERES	Armature Resistance	Field Resistance	ELECTRO MOTIVE FORCE		
						On Lamps	At Dynamo	On Field
950	about 320		275	.015	6 1/4	102	105	
985	"		283	"	"	105	108	
1000	"		292	"	"	108	111	
1010	"		295	"	"	109	112	
940	"		268	"	"	100 1/4	103	

ARMATURE.

Length of Face 18"
 Diameter, Outside 10 1/2"
 " of Iron Core 9 1/4"
 Size of Wire, B. W. G. #16
 " " " Outside Insulation
 Number of Loops 1
 No. of wires per loop 12
 No. of Commutator Blocks 54
 Clearance bet. Armature and Field
 Temperature of Armature
 Temperature of Room

Diagram



FIELD MAGNETS.

Cores 4
 How Connected all in Mult. arcs
 Resistance of Ea. Core 25 ohms
 Total Magnet Resistance 6 1/4 "
 Size of Wire, B. W. G. #17 .058
 " " " Outside Insulation #13 .095
 Weight of Wire on Ea. Core 80 lbs
 Layers of Wire on Ea. Core
 Convulsions per layer
 Length of Iron Core 24"
 Diam. " " 8"

Remarks

Temp of field warm
 Dynamo run for 2 hours.
 Temp of Armature not over 80°C

Was it hot or did the
 armature freeze up - This point
 would be as interesting almost as the
 speed results.
 Edison

DYNAMO TEST.

1883-08-16

THE EDISON ELECTRIC LIGHT CO. TESTING ROOM.

Sept 18th Armature No.

New York, August 16th 1883

Speed of Armature	Lamp Load	Candle Power	AMPÈRES	Armature Resistance	Field Resistance	ELECTRO MOTIVE FORCE		
						On Lamps	At Dynamo	On Field
950	about 320		275	.015	6.43	102	105	
1000	"		292	"	"	108	111	
1010	"		294	"	"	109	112	
940	"		268	"	"	100	103	

ARMATURE

Length of Face 18"
 Diameter, Outside 10 1/2"
 " of Iron Core 9 1/4"
 Size of Wire, B. W. G. #16
 " " Outside Insulation
 Number of Loops 1
 No. of wires per loop 12
 No. of Commutator Blocks 54
 Clearance bet. Armature and Field
 Temperature of Armature
 Temperature of Room

Diagram

FIELD MAGNETS.

Cores 4
 How Connected All in Mult arc
 Resistance of Ea. Core 25.72 ohms
 Total Magnet Resistance 6.43
 Size of Wire, B. W. G. #17 .058
 " " Outside Insulation #13 .095
 Weight of Wire on Ea. Core 80 lbs
 Layers of Wire on Ea. Core
 Convolutions per layer
 Length of Iron Core 2 1/2"
 Diam. " " 8 1/2"

Remarks

Dynamo had a run of 2 hrs.
 Field slightly warm.
 Armature about 60° or 70° C.

THE EDISON ELECTRIC LIGHT CO.,

35 NASSAU AVENUE,

Testing Room

New York,

1883-08-17

Aug 17th 1883

Mr. Thos A. Edison

Dear Sir

The temperature of the 15" Armature in both tests (i.e. with different amt of wire on cores) was not taken with the thermometer but I should judge from having felt of the armature after the Dynamo had stopped running that it could not have been over 75°C . I could touch it quite easily but could not hold my hand on it.

Yours truly

J. C. Chamberlain

Testing Room.

Fields slightly warm in both tests.

1883-09-21

Type 300 Light.

Experimental

New York Sept. 21st

188-7

Speed of Armature	Lamp Load	Candle Power	AMPÈRES	Armature Resistance	Field Resistance	ELECTRO MOTIVE FORCE		
						On Lamps	At Dynamo	On Field
1025			220	0.115	10.60			
1100			260	"	"	109½	104	108

ARMATURE

Length of Face $29\frac{3}{8}$ "
 Dia. after Outside $10\frac{1}{2}$ "
 " " of Iron Core $9\frac{1}{2}$ "
 Size of Wire, B. W. G. $\#10$, B.W.G. .134
 " " " Outside Insulation .154
 Number of Loops 1
 No. of wires per loop 4
 No. of Commutator Blocks 48
 Clearance bet. Armature and Field
 Temperature of Armature 61°C
 Temperature of Room

FIELD MAGNETS.

Cores	2
How Connected	In Series
Resistance of Ea. Core	5.30 ohms.
Total Magnet Resistance	10.60 "
Size of Wire, B. W. G.	#12 .109
" " Outside Insulation	.134
Weight of Wire on Ea. Core	207 lbs.
Layers of Wire on Ea. Core	11
Convolutions per layer	175
Length of Iron Core	24"
Diam. " "	10 1/2"

Diagram

$$\begin{array}{r} 10000 \\ \hline 0000 \end{array}$$

Remarks

1 1/2 hours, run.
Magnets warm (50°C)
Very little sparking.

1883-09-24
Writes to B. & says much abt.
for samples & asks him if he won't
go up to Bergmann & explain all
about it & how to make
Mr. Thomas A. Edison
the most ~~best~~ ^{best} Sir: E

I have the pleasure
to present to you, herewith, several samples of
a new safety plug which, I believe, approaches
more nearly to the conditions required in a first
rate plug than any heretofore made.

They are made out of pure Portland cement
mixed with as little water as will render the
mass plastic, (say 1000 lbs. cement to 300 lbs. water)
and well mixed so as to render the mass as
nearly dense and free from air as possible.
This is well rammed into the moulds, which
have been well greased with hard grease,
and the plunger is well worked so as to
distribute the mass equally and compress it
firmly into shape. The cement sets in five
or six hours so as to allow handling and
as soon as I remove it from the mould, I

1883-09-24

let it harden under water for five or six days. This is admirable, because the cement becomes much tougher, than if allowed to dry ~~in air~~. After letting them season thus ~~for five or six days~~, I let them dry for a day and then boiled them in Paraffine, though I believe that this operation is not necessary.

The result, as you may see from the sample is a hard, dense, well molded plug. Each plug before you measures infinity of resistance. They were measured after a soaking which lasted four days and were only wiped dry on the surface. Three of them, those with brass caps, measured infinity when first taken out of the water in which they were left to season and were not only wet from cooking, but ^{also from} the water used in mixing them. This result was so far beyond anything that we had anticipated, that at Mr. Dixon's suggestion

1883-09-24

3

I measured them again but with the same result. This would seem to indicate a very dense mass of a perfect non-conducting body. wh, I think, is fair to expect from the nature of the ingredients - principally silicates of alumina, potash, and lime. I also measured the plug immediately on taking them out of the bath of hot paraffine, and tho' they were almost too hot to allow handling, yet again measured infinity.

As to durability and strength:

The well known properties of Portland cement assure both these and I quote a few sentences from standard works.

..... "Portland cement does not reach its greatest strength until years after it has been used; indeed, our knowledge is still imperfect as to the ultimate range of improvement it may attain.

..... "in the air, in the water, and, in fact, under all possible circumstances the possibility

1883-09-24

4

of using this material with success forms one of the greatest recommendations in its favor."

"Blocks if kept in water, become stronger than if kept out."

"Salt water is as good for mixing Portland cement as fresh."

"It has been found in cutting out Portland cement concrete, the mass, if well made, is as close and hard as the best stone."

The author describes a process of hardening the cement quickly by immersing the blocks in dilute of soda. This I have not tried for I did not care to increase the cost if the pure cement would answer the purpose.

The cost, too, is less than any other plug I know of. A barrel of Portland cement weighing net 400 pounds costs about \$3.00, (a trifle less now I believe) and one plug requires about 350 grains dry cement. A simple calculation would show the small fraction of

1883-09-24

5

a cent, wh one would cost, and the manufacture is of the simplest kind. It can readily be done by boys. Mr. Andrews has one of the samples in his pocket and in speaking to me, said it was the best he had seen.

Respectfully,

Charles L. Bristol.

September 24, 1883.

Greene St. Shop.

THOMAS A. EDISON,
No. 65 FIFTH AVENUE.

1883-09-26

NEW YORK,

Sept. 26.

1883

Mr. Edison

Dear Sir:

I leave this morning
three more ships which have soaked
for a whole week in water and
measured infinity immediately on
taking out - yesterday morning.

Respectfully

Charles L. Bristol.

Genl. Lt. Factory Room -

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-11-24

New York,

Nov 24

1883

Mr J. A. Edison

Dear Sir

The zinc sulphate from
Lehr & Pink contains consider-
able iron and is unfit for
use in the meters.

I made a series of compar-
ative tests with it and that
which I use here, and although
mine here failed to indicate any
iron that from Lehr & Pink
gave a decided reaction in each
case.

Yours etc

Geo. L. Brown.

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

1883-12-12

New York,

Dec 12-13th

1883

I made test as you desired
on heating of short core "C" Dyn.
exciting same by Holland "C" Dyn.
- owing to heating of crank pin -
I loss of steam power I had to
shut down even now & then -
The temp. of course was taken
just before shutting down -
at first reading 42 then after
steady at 44 - a total run of over 85

W. Kennedy & Sons

[INCOMPLETE]

2

P. H. Madding

THE EDISON ELECTRIC LIGHT CO.,
35 FIFTH AVENUE.

New York, _____ 189

=

a loss of about 5 or 6% of total Current, and to make the new only 25 ohms would imply a much heavier loss. In our old "E" Dynamo the percentage of loss in field is about 8 - In the "J", it is a little over 5% In the "L" a little over 4% and in the "K" only 3.8% - Thus you will see that if we reduced the field of our 440 Light dynamo to 25 ohms, there will be a much heavier percentage of loss in field, than in any of the others - and this is so much power expended from which we can draw no visible effects - I think, myself, that this armature will run 2000 revolutions in the new bearings without any fear of heating - and at that speed of course the machine would be more economical than if run slower - Still if you think it best to raise the E.M.F. by

[INCOMPLETE]

3

THE EDISON ELECTRIC LIGHT CO.,
65 FIFTH AVENUE.

New York, _____ 188

pulling another turn of wire round armature
I think it would stand the extra wire, but
I really would not make the field lower
I find that the bolts were only insulated
in the ordinary way with mica under
head and nut, but Dean says that he is
going to have the next one insulated
all the length of bolt, with fibre tape -

The single pair of copper brushes carried
250 (8 1/2 HP) lamps for about 30 min.
I should have given them a longer test
- but had so many other jobs requiring
attention

Yours truly,
W. S. Andrews

Table of Heat Constants, for German Silver Wire at different temperatures, in the open air
 To find the no. of Wicks that any size G.S. Wire will carry at given temperature $\sqrt[3]{\text{Constant} \times \text{diameter in Wicks}^3} = \text{Wicks.} -$

The following list of heat constants was determined by actual experiment upon No. 12 G. S. Wire (actual diam = 10 1/2 mils), and the constants were afterwards applied to other sizes of German Silver wire, and the results were found by experiment to be substantially correct.

Constants were determined at a Room Temp. = 55 F.

Temperature of Wire	Heat Constant
Blood warm	.0001349
Warm	.000184
Warmer	.0002645
Increasing	.0003265
Too hot to touch	.00047
Just begins to sizzle	.000836
Boiling hot	.001117
Begins to scorch wood	.001372
Scorches wood quickly	.002041
Makes wood smoke	.002293
Burns gunpowder	.005224

Tabulated Carrying Capacity of G. S. Wire (different sizes)

Temp. of Room = 55 Fahr.

Gauge (?)	10	12	15	16	17	18	19	20
Actual diam. in mils	129	104	58	50	45	41	35	32
Res. in ohms per foot (cable)	.00496	.00781	.0305	.0704	.08174	.0933	.1383	.15517
Temp. of Wire	Hebun	Hebun	Hebun	Hebun	Hebun	Hebun	Hebun	Wobun
Block even	14	13	5	4	3.5	3	2.5	2
Warmer	20	15	6	5	4	3.5	2.8	2.5
Warmer	24	18	7	5.5	4.8	4	3.3	3
Increasing	26	20	8	6.3	5.5	4.5	3.7	3.3
Too hot to touch	32	24	10	7.5	6.5	5.5	4.4	3.8
Just begins to sizzle	42	32	12.5	10	8.5	7.5	6	5
Boiling hot	49	34	14.5	11.5	10	8.5	6.8	6
Begins to scorch wood	54	41	16.5	13	11	9.5	7.6	6.5
Scorches wood quickly	66	50	20	16	13.5	11.5	9.3	8
Makes wood smoke	70	53	21	17	14.5	12.5	9.8	8.5
Fire gun powder	106	80	32	25.5	21.8	19	15	13

Notes on Table of Carrying Capacity
of German Silver Wire

The amount of current set down in this table, as bringing a certain size of wire to a certain temperature is only roughly correct, the conditions themselves being somewhat indefinite. In the sizes 10 to 15, the formula may be said to give the temp. with reasonable accuracy, but in the smaller sizes from 16 to 20, as soon as the wire becomes boiling hot or thereabouts, it lengthens considerably, and the temp. increases in a quicker ratio. The diagonal red line on table approximates the place where this source of error commences.

For practical purposes however the figures in table will be found sufficiently correct.

M. S. Anderson

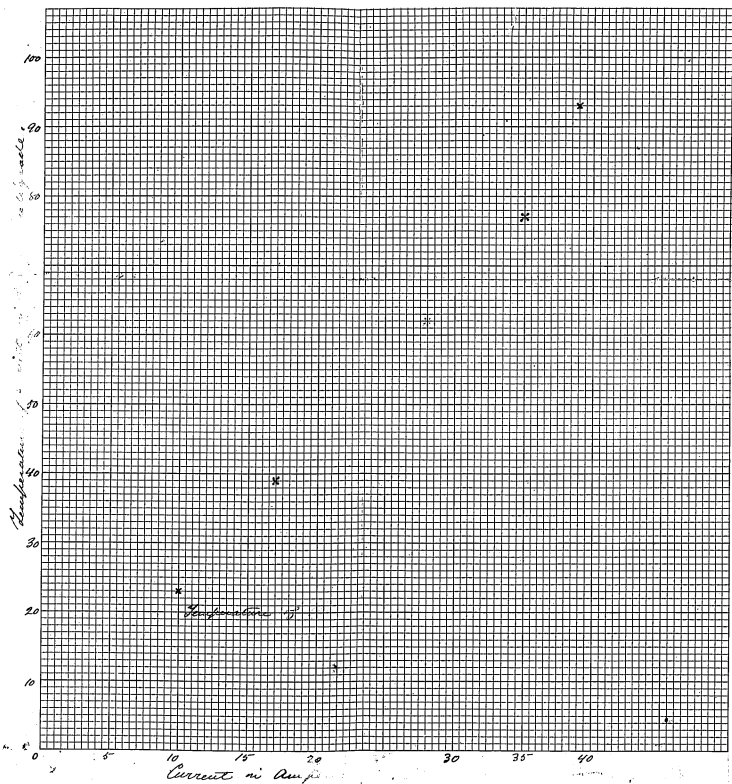
(883)

Dimensions

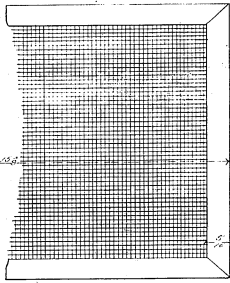
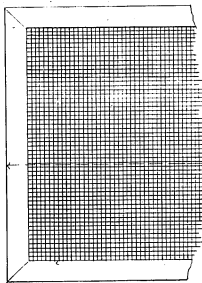
CAPACITY 16 C.P. NOMINAL	S Type	ACTUAL Revolutions PER MINUTE	DIMENSIONS			
			LENGTH	WIDTH	HEIGHT	
2 Cores {	25 G	1900	32" ^{floor type}	36"	46"	Pulley 5 1/4 di. 3 3/4 H
	50 R	1600	32"	36"	46"	" 6" D. x 6" H
	100 T	1500	46"	36"	52"	" 7 1/2" x 6 1/2"
	200 S	ab. 1400	to be built to match.			" 12" x 9 1/2"
	300 Y	1520	62"	58"	85"	" 12 1/2" x 10 1/2"
400 H		1860	74"	50"	67"	" 14 1/2" x 12 1/2"

(1883)

report of the
Experiments of
Shuntz



(882)

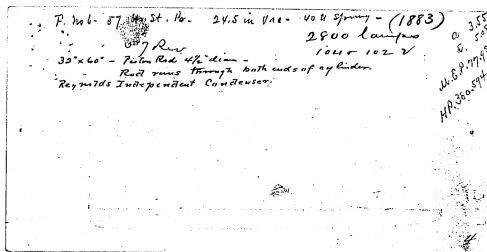
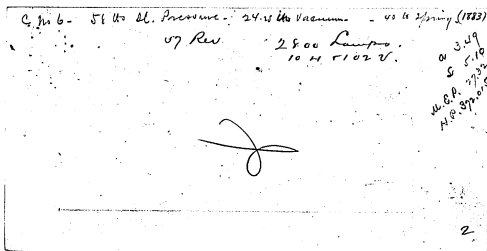


49

Wire Guard ~~to~~ going
between Magnets
over armature

Wire Guard for going
between Magnets and
over armature





235-15-11P

AMERICAN STEAM GAUGE CO., BOSTON, MASS.,
ESSENTIAL MANUFACTURERS OF
Richards' and Thompson's Parallel Motion Indicators

DIAGRAM from M Engine

Diameter of Cylinder.....

Length of Stroke.....

Revolutions per minute 342

Pressure of Steam in lbs. in Boiler 110

Position of Throttle Valve.....

Vacuum per Gauge in Inches.....

Temperature of Hot Well.....

Scale of Spring 60 lb.

Inside Diameter of Feed Pipe.....

" " " Exhaust Pipe.....

Valves.....

Built by.....

Pressure.....

Barometer reads.....

Throttle.....

Regulator.....

REMARKS: 119 with
1020 and
74 file.

246-60-11P

AMERICAN STEAM GAUGE CO., BOSTON, MASS.,
ESSENTIAL MANUFACTURERS OF
Richards' and Thompson's Parallel Motion Indicators

DIAGRAM from M B Engine

Diameter of Cylinder.....

Length of Stroke.....

Revolutions per minute 328

Pressure of Steam in lbs. in Boiler.....

Position of Throttle Valve.....

Vacuum per Gauge in Inches.....

Temperature of Hot Well.....

Scale of Spring 60

Inside Diameter of Feed Pipe.....

" " " Exhaust Pipe.....

Valves.....

Built by.....

Pressure.....

Barometer reads.....

Throttle.....

Regulator.....

REMARKS: XXX X (1883)

224-75-11P

AMERICAN STEAM GAUGE CO., BOSTON, MASS.,
ESSENTIAL MANUFACTURERS OF
Richards' and Thompson's Parallel Motion Indicators

DIAGRAM from M Engine

Diameter of Cylinder.....

Length of Stroke.....

Revolutions per minute 339

Pressure of Steam in lbs. in Boiler 127

Position of Throttle Valve.....

Vacuum per Gauge in Inches.....

Temperature of Hot Well.....

Scale of Spring 60

Inside Diameter of Feed Pipe.....

" " " Exhaust Pipe.....

Valves.....

Built by.....

Pressure.....

Barometer reads.....

Throttle.....

Regulator.....

REMARKS: C (1823)

202-44-11P

AMERICAN STEAM GAUGE CO., BOSTON, MASS.,
ESSENTIAL MANUFACTURERS OF
Richards' and Thompson's Parallel Motion Indicators

DIAGRAM from M Engine

Diameter of Cylinder.....

Length of Stroke.....

Revolutions per minute 251

Pressure of Steam in lbs. in Boiler 120

Position of Throttle Valve.....

Vacuum per Gauge in Inches.....

Temperature of Hot Well.....

Scale of Spring 60

Inside Diameter of Feed Pipe.....

" " " Exhaust Pipe.....

Valves.....

Built by.....

Pressure.....

Barometer reads.....

Throttle.....

Regulator.....

REMARKS: D (1883)

350/1552
 $\frac{1207}{64.2}$ lbs.

335.2 P.

342 rev.

"H"

"B"

416/1036
 $\frac{1176}{70.2}$ lbs.

246.6 P.

328 rev.

"C"

375/355
 $\frac{105}{63.0}$ lbs.

228.7 P.

339 rev.

"D"

317/356
 $\frac{896}{55.4}$ lbs.

200.7 P.

351 rev.

217.14 AP
 AMERICAN STEAM GAUGE CO. BOSTON, MASS.
 EXCLUSIVE MANUFACTURERS OF
 Richards' and Thompson's Parallel Motion Indicators.

DIAGRAM from M
 Diameter of Cylinder.....
 Length of Stroke.....
 Revolutions per minute 352
 Pressure of Steam in lbs. in Boiler 122 W.J.
 Position of Throttle Valve.....
 Vacuum per Gauge in Inches.....
 Temperature of Hot Well.....
 Scale of Spring 60
 Inside Diameter of Feed Pipe.....
 " " " Exhaust Pipe.....
 Valves.....

5" (1883) IS
 Engine.....
 Built by.....
 Pressure.....
 Barometer reads.....
 Throttle.....
 Regulator.....
 REMARKS:

205.67 AP
 AMERICAN STEAM GAUGE CO. BOSTON, MASS.
 EXCLUSIVE MANUFACTURERS OF
 Richards' and Thompson's Parallel Motion Indicators.

DIAGRAM from M
 Diameter of Cylinder.....
 Length of Stroke.....
 Revolutions per minute 328
 Pressure of Steam in lbs. in Boiler.....
 Position of Throttle Valve.....
 Vacuum per Gauge in Inches.....
 Temperature of Hot Well.....
 Scale of Spring 60
 Inside Diameter of Feed Pipe.....
 " " " Exhaust Pipe.....
 Valves.....

17" (1883) IS
 Engine.....
 Built by.....
 Pressure.....
 Barometer reads.....
 Throttle.....
 Regulator.....
 REMARKS:

201 AP
 AMERICAN STEAM GAUGE CO. BOSTON, MASS.
 EXCLUSIVE MANUFACTURERS OF
 Richards' and Thompson's Parallel Motion Indicators.

DIAGRAM from M
 Diameter of Cylinder.....
 Length of Stroke.....
 Revolutions per minute 340
 Pressure of Steam in lbs. in Boiler 115
 Position of Throttle Valve.....
 Vacuum per Gauge in Inches.....
 Temperature of Hot Well.....
 Scale of Spring 60
 Inside Diameter of Feed Pipe.....
 " " " Exhaust Pipe.....
 Valves.....

G (1883) IS
 Engine.....
 Built by.....
 Pressure.....
 Barometer reads.....
 Throttle.....
 Regulator.....
 REMARKS:

343 (356)
96.0
57.6

217.1 PP
352 rev -

"E"

351 (356)
99.0
59.4

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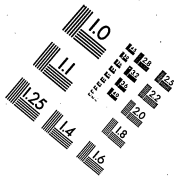
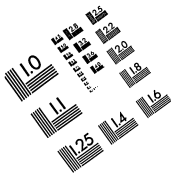
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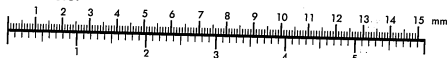


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